

1946

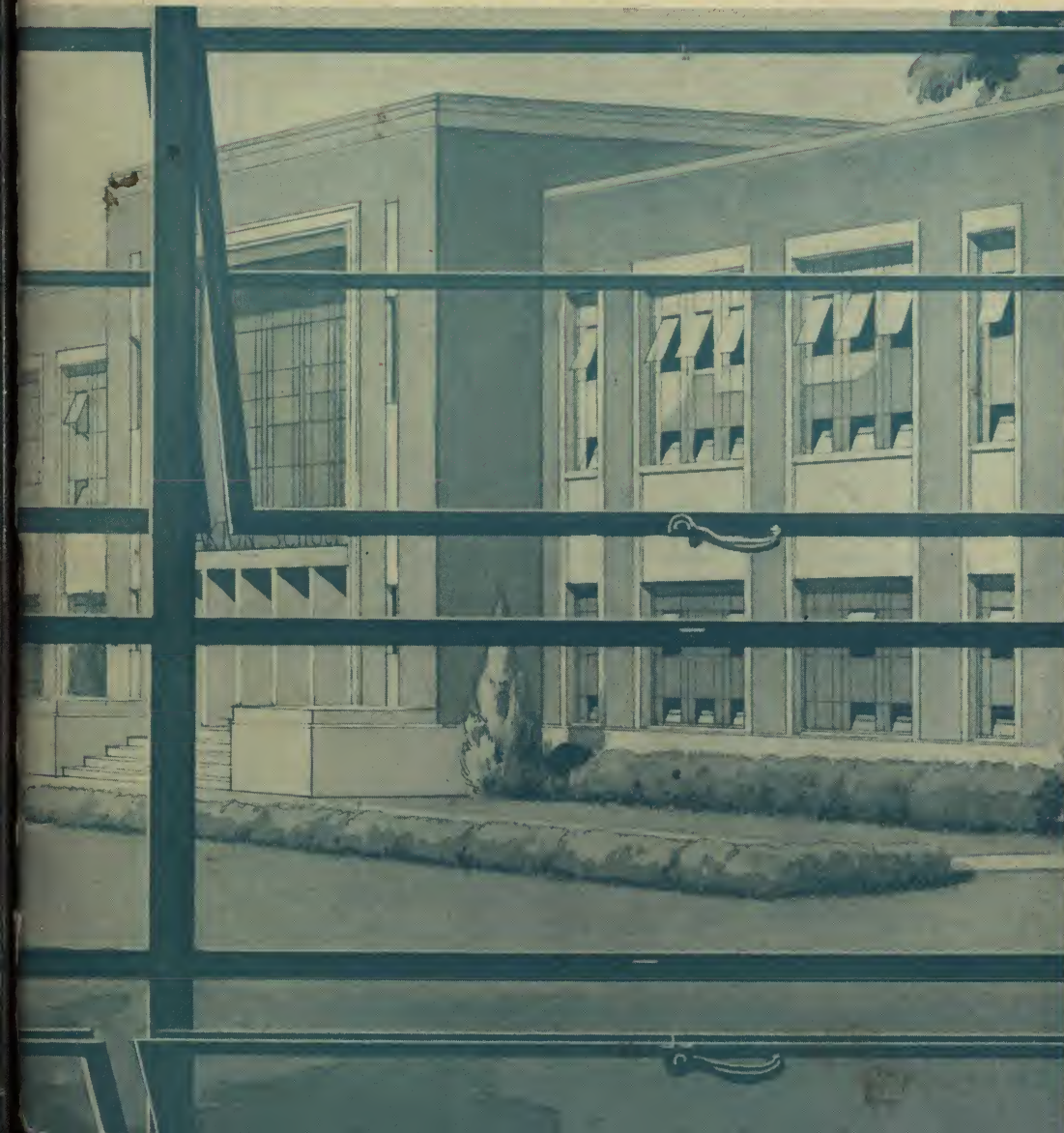
CATALOG

42
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40



LUPTON

M E T A L
W I N D O W S
A N D D O O R S



MICHAEL FLYNN
MANUFACTURING CO.

MEMBER METAL WINDOW INSTITUTE

MICHAEL FLYNN MANUFACTURING CO.

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MEMBER — METAL WINDOW INSTITUTE

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* Indicates products for which some types and sizes have been changed from those shown in our 1945 catalog.

PHILADELPHIA—MAIN OFFICE AND PLANT
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MICHAEL FLYNN MANUFACTURING COMPANY — PHILADELPHIA

Lupton METAL WINDOWS AND DOORS

Changes in Sizes for 1946

In 1944 manufacturers of metal windows discontinued as standard the window dimensions based on 12" x 18" and 14" x 20" glass sizes and, after careful study of the requirements for contemporary building, they adopted a new set of standards based on bar center dimensions of 20" x 16".

Experience with the new sizes during 1945 indicated that a few additional minor changes would increase the advantages to be derived from the general revision of long-established standards.

These changes are:

1—For Pivoted, Commercial Projected and Security Windows. The 3'-4 $\frac{7}{8}$ " and 4'-0 $\frac{7}{8}$ " widths have been replaced by a new width of 3'-8 $\frac{7}{8}$ " that has been found to be a more useful size for both single and multiple unit openings. Mullion details and dimensions for these products have also been revised. (See pages 32 and 33.)

2—For Intermediate Projected and Architectural Projected Windows. Two-light-high ventilators have been substituted where one-light-high projected-out ventilators formerly occurred and a new series of units 9'-5" high have been added.

3—Housing Casements. The former basic bar center dimensions of 20" x 16" have been changed to the more suitable dimensions of 20" x 12" and a number of types have been added.

4—Casement Doors. Size and design has been revised to conform with Intermediate Casement standards.

5—Basement Windows. The window dimension height is shown to coincide with the clear opening dimension.

6—Industrial Doors. This Company has adopted a simpler profile for pressed steel frames and made minor changes in the hardware available for these doors.

General Information

FACTORY FINISH—All Lupton products are painted at the factory to protect them during shipment and to provide a satisfactory base for subsequent coats of paint. One coat of gray phenolic resin paint, oven dried, is standard.

PARKERIZING—At small additional cost any Lupton product may be Parkerized at our factory before painting.

INSTALLATION—An experienced erection force is available for installation of any of our products. Where stock items such as Residence Casements, Pivoted, Projected and Basement Windows and Industrial Doors are erected by the general contractor our instructions should be followed exactly.

INSTALLATION DETAILS—For the best and most satisfactory service the principles illustrated in the details previously developed by the Metal Window Institute and shown generally throughout this catalog are recommended. These include—erection of windows in prepared openings, the use of calking or mastic for prevention of metal to masonry contact, the use of through-the-wall flashing over all lintels and under sills, and the avoidance of "grouting-in" of window flanges.

It is recognized, however, that in many buildings for industrial use some of these recommendations are not essential. Therefore, alternate details are shown. Used under favorable conditions, these may result in satisfactory service at less cost. (See page 31.)

GRID LINES—Grid lines and grid locations have been indicated on details for the convenience of those using the 4-inch modular system in designing.

FIELD PAINTING—It is recommended that windows be painted before glazing. After glazing no painting should be done until putty has set (about 3 weeks).

GLAZING—Single thickness glass is not recommended. Always use properly prepared steel window putty and employ experienced steel window glaziers. Glass must be bedded in putty to prevent glass-to-steel contact. All glass quantities, sizes and templates are furnished for customers' convenience only; we do not assume responsibility for their accuracy. Special schedules and templates of glass cutting sizes are furnished only at extra cost.

NOT INCLUDED—The following items are not included with any of our products but will be furnished by us at additional cost if so desired: installation, glass, glazing, putty, mastic, calking, application of calking, field painting.

NOTE—Although every effort is made to have catalog information correct at time of printing, improvement in product design and in manufacturing methods may require subsequent revision of standard details and specifications. The data in this book are therefore subject to revision without notice.

Lupton RESIDENCE CASEMENTS



Lupton Residence Casements are used in residential buildings of all types:—homes, apartment houses, dormitories and hotels.

They have many superior features.

Better Ventilation — Outswinging leaves provide controlled ventilation at all times.

More Light — Narrow frames and mullions allow more daylight for a given opening.

Weathertight and Easy to Operate — Cannot shrink, swell, warp or stick. Always easily operated. Double weathering contact assures weathertightness.

Easily, Safely Cleaned — Extended hinges permit cleaning all the glass from inside the building.

CONSTRUCTION — Made of solid hot rolled steel casement sections 1" deep, assembled in accurate jigs to insure uniformity.

Ventilators are hung on extended hinges with bronze bearing and are adjusted at the factory to perfect weathering contact.

STOCK SIZES — The sizes and types illustrated on opposite page are normally carried in stock for quick delivery.

HARDWARE — Underscreen operator and locking handle are standard equipment on all casements — hardware has bronze lacquered finish. Solid bronze hardware is available at additional cost.

PROVISION FOR SHADES AND SCREENS — All Lupton Casements are prepared for attaching shade brackets and screens.

Accessories

The following items are available at corresponding increase in cost.

SCREENS — Metal frames with bronze wire cloth.

INSULATING WINDOWS — Metal frame glass panels for attaching on the inside.

WOOD SURROUNDS — For rapid installation in brick veneer or all-frame construction.

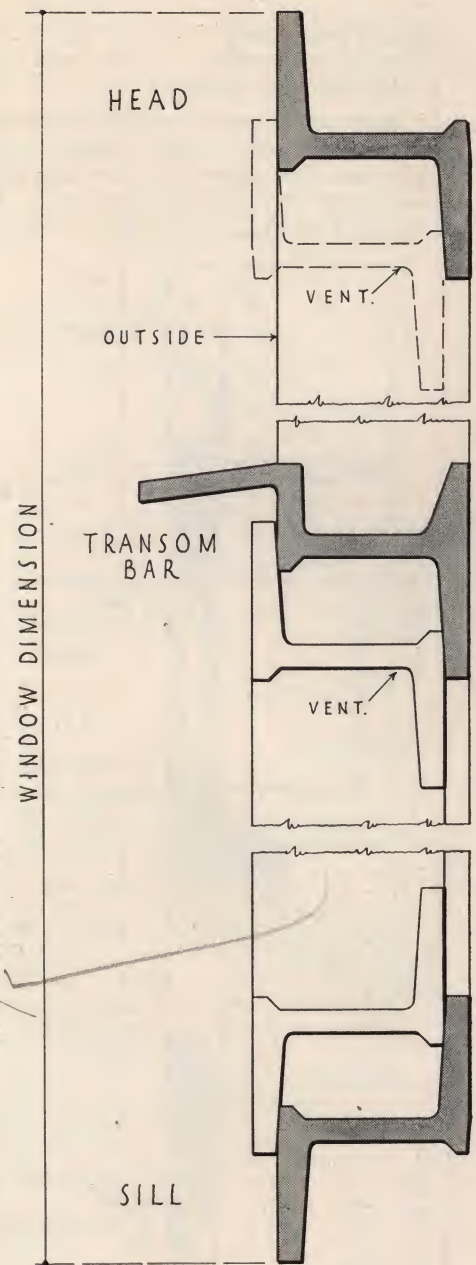
BAY WINDOWS — Pipe mullions are available for Bay or Corner Windows.



MICHAEL FLYNN MANUFACTURING COMPANY — PHILADELPHIA

Lupton RESIDENCE CASEMENTS—Types and Sizes

WINDOW DIMEN.	1'-7 $\frac{1}{8}$ "	2'-7 $\frac{5}{8}$ "	3'-1"	4'-5 $\frac{1}{8}$ "	2'-2" DIA. 33111 BULLSEYE Consult Factory for Glass Sizes.
2'-2"	1212 L	2212 N L	2222		
2'-8 $\frac{3}{8}$ "		2313 K L			
3'-2 $\frac{3}{8}$ "	1313 L	2313 N L	2323	3323	
3'-6 $\frac{5}{8}$ "		2414 D L			
4'-2 $\frac{5}{8}$ "	1414 L	2414 N L	2424	3424	
4'-2 $\frac{5}{8}$ "	1413 L	2413 N L	2423	3423	
5'-3"	1514 L	2514 N L	2524	3524	



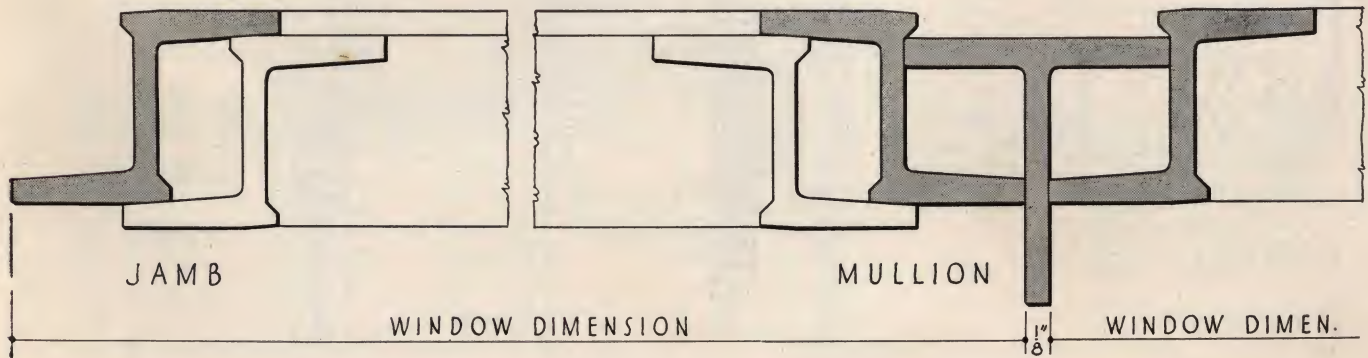
WINDOW DIMENSION

Fixed windows—Fixed windows are available in all sizes shown for ventilated units.
All windows are viewed from outside. Single ventilated units are made left hand as shown (marked L) or right hand (marked R).
Window dimensions are over-all dimensions of units.

Glass sizes in inches
(Lights not marked are "A")

A	16 x 12	E	14 x 10
B	16 x 11-5/16	F	14 x 9-5/16
C	14 x 12	G	14-3/4 x 12
D	14 x 11-5/16	H	17-1/4 x 12
J	Consult Manufacturer for size.		

SECTIONS - FULL SIZE

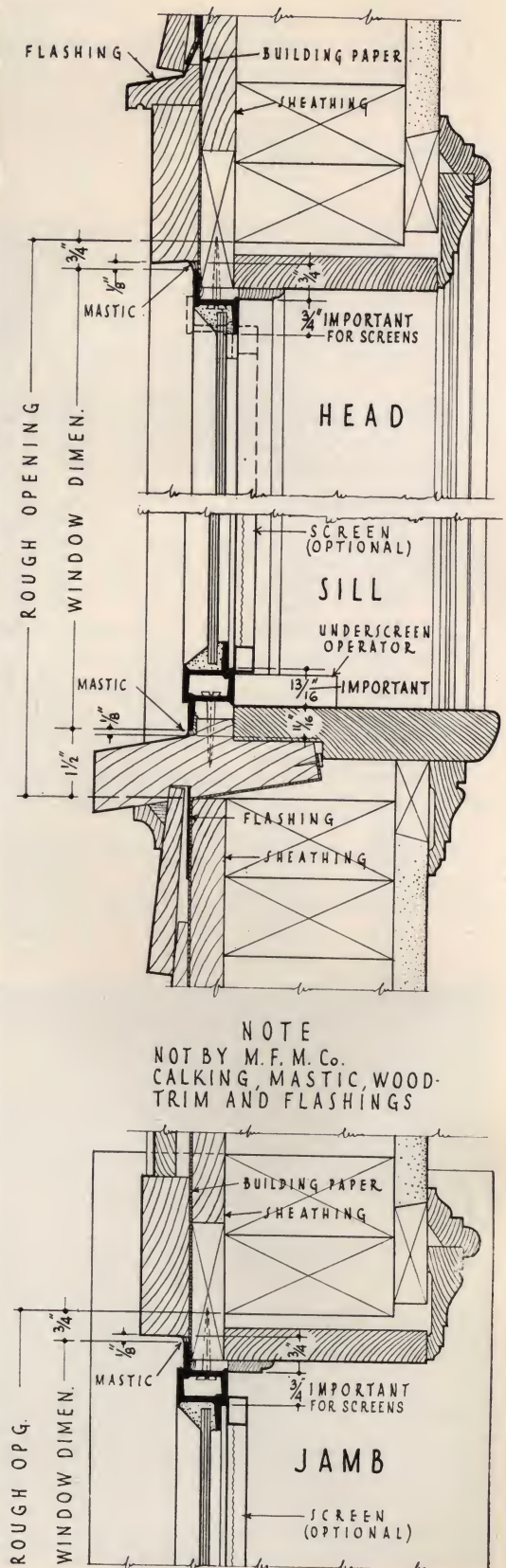
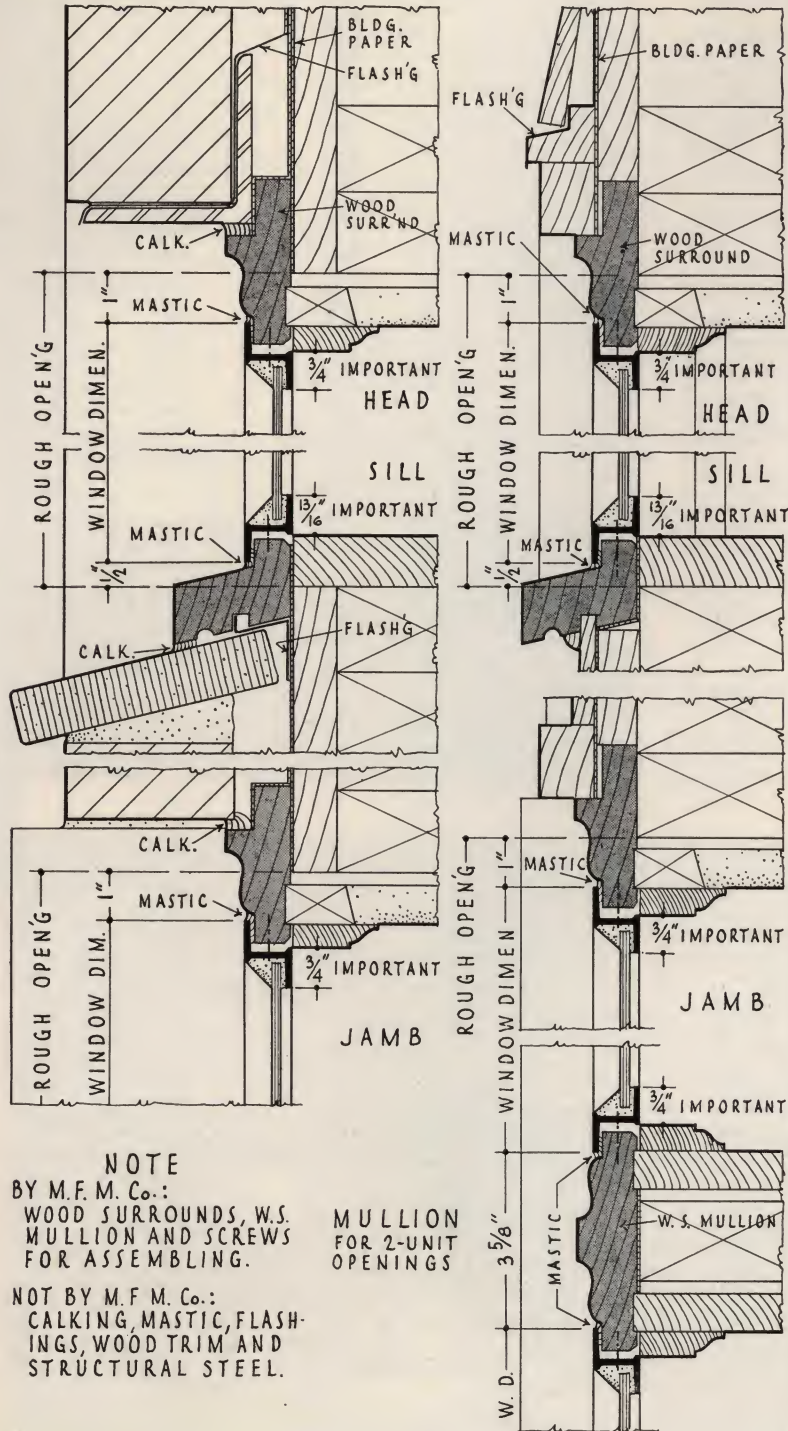


Lupton RESIDENCE CASEMENTS — Details

Scale 3" = 1'-0"

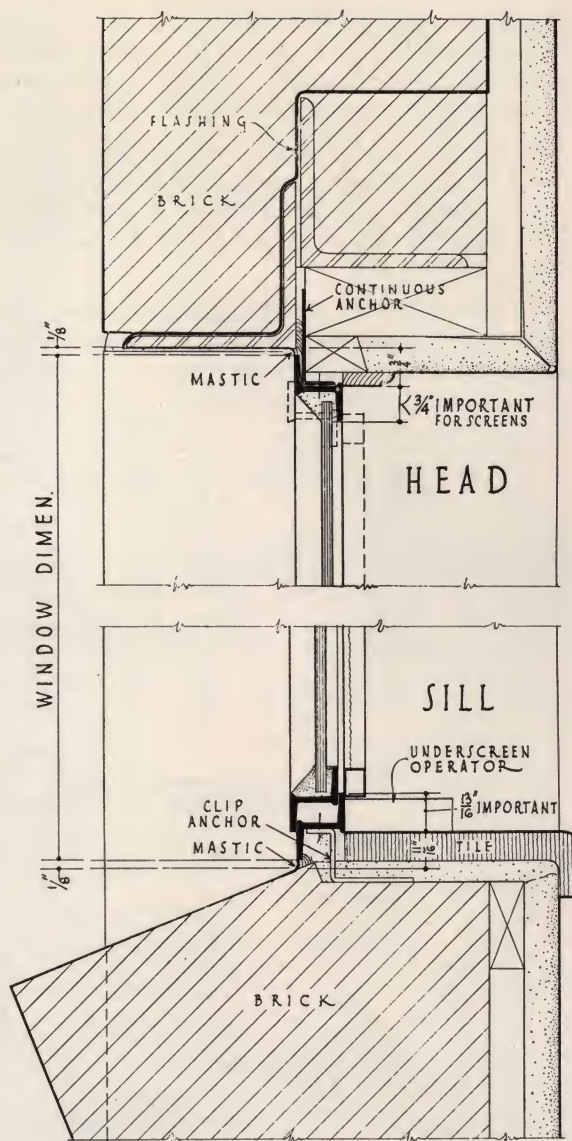
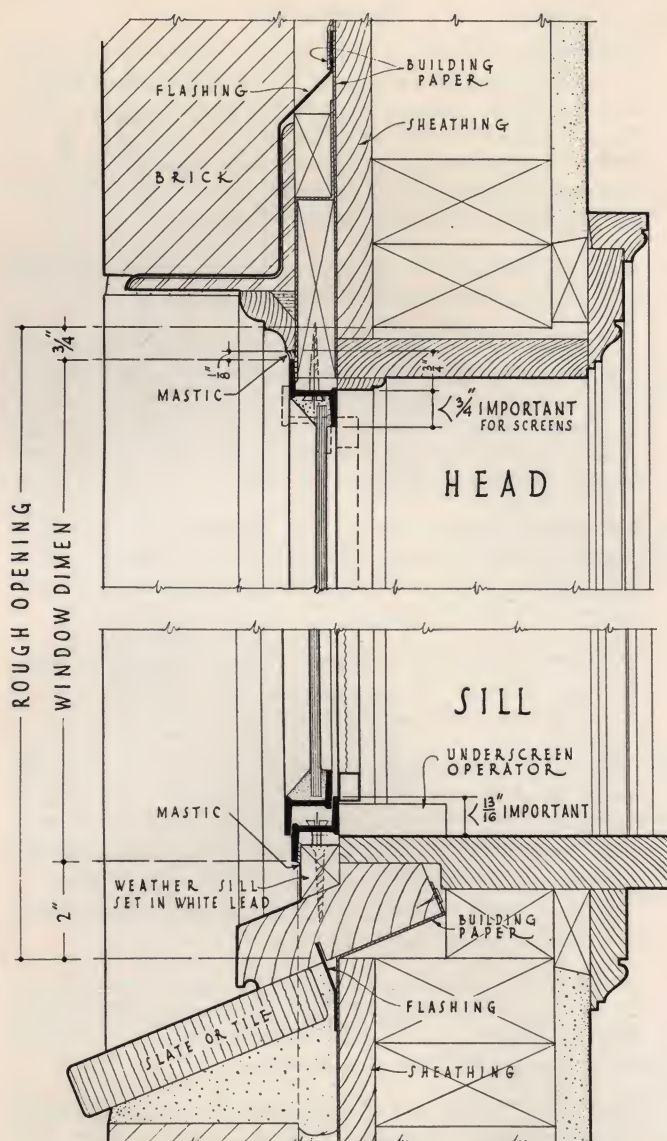
Wood Surrounds — Lupton Wood Surrounds used with Lupton Casements provide a time and trouble saving short cut to better window installation.

Surrounds are furnished unpainted and already cut to the exact size to fit standard size casements. Joints are interlocking and the upper corners are mitered. Wood screws and nails are included for assembling. Assembly in field is recommended to avoid damage in transit.

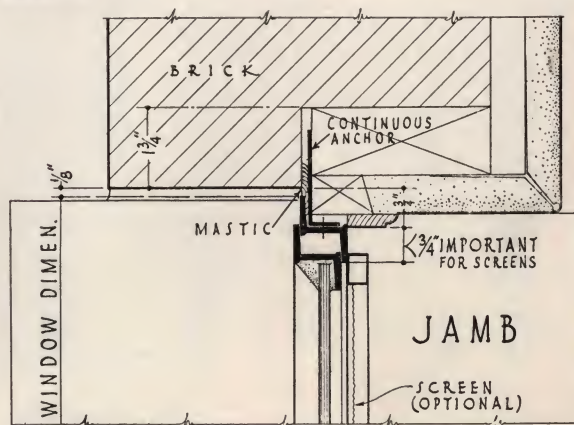
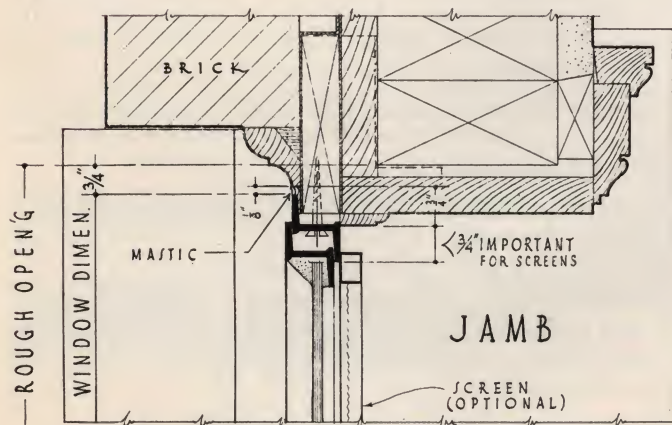


Lupton RESIDENCE CASEMENTS — Details

Scale 3" = 1'-0"



NOTE BY M.F.M. Co.: ANCHORS AND SCREWS FOR ATTACHING
NOT BY M.F.M. Co.: CALKING, MASTIC, FLASHINGS, TRIM AND STRUCTURAL STEEL.



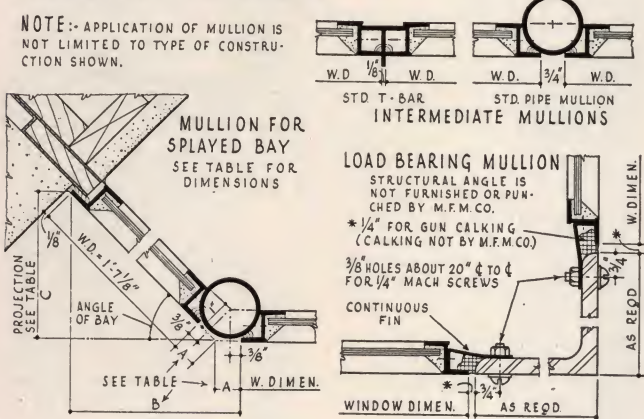
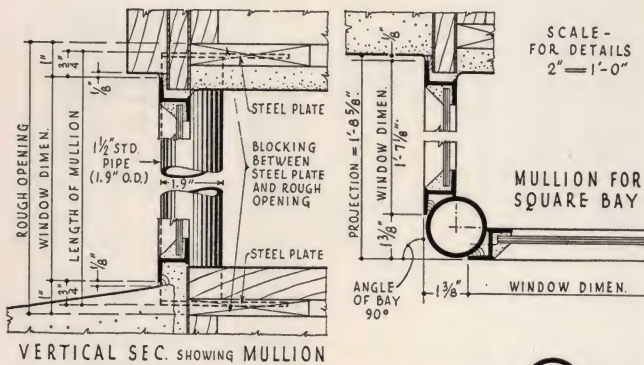
Lupton RESIDENCE CASEMENTS — Specification — Mullions

Bay and Corner Windows

Standard pipe mullions for corner or bay windows are furnished as non-load-bearing members. Load above the windows must be supported by cantilever construction or lally column.

Where load-bearing mullions are required structural members should be used. These are not furnished by the window manufacturer, although a detail is included here suggesting a practical method for attaching casements to a typical structural mullion.

Pipe mullions are 1½" standard pipe (1.9" outside diameter) with a 12-gauge steel plate welded to each end for anchoring.



ANGLE OF BAY	A	B	PROJECTION C	TYPE
30°	5/8"	1'-5 3/4"	9 7/8"	
45°	13/16"	1'-2 15/16"	1'-2 1/8"	
60°	15/16"	10 15/16"	1'-5 3/8"	

Specification

MATERIALS — Frame and ventilator members shall be unequal leg section specifically designed for the manufacture of casement windows. Sections shall be hot rolled from new billet steel. Each section shall have a depth front to back of not less than 1" and a minimum thickness of ⅛". Combined weight of frame and ventilator sections shall be not less than 2.10 pounds per lineal foot exclusive of fins and sub-frames.

GLAZING PROVISION — Sections shall be designed for outside putty glazing, using spring wire glazing clips.

CONSTRUCTION — Frame and ventilator joints shall be mitered and butt-welded along their entire intersection and ground flush. Muntins shall be interlocked with flush joints at their intersections and tenoned and riveted at frame connections. Ventilators shall be side hinged and shall make continuous double overlapping contact with frames on all sides.

ANCHORS — Anchor clips shall be furnished as indicated on casement manufacturer's details. Continuous anchors* of 16-gauge steel shall be furnished at head and jams of all casements set direct to masonry.

MULLIONS and TRANSOM BARS — Where two or more window units are used in one opening, mullions or transom bars of hot-rolled steel shall be furnished.

HARDWARE — All casements shall be prepared for attaching Lupton fixed screens and shall be designed for operation of ventilators from within the building without moving screens.

Casements shall be equipped with lift-action locking handles, underscreen operators and window-cleaning type hinges.

Hinges shall be steel with bronze to steel flat bearing contacts and shall be solidly welded to frames.

SCREENS* — Furnish Lupton fixed screens and screen clips for all casements. Screens shall have metal frames with 16 mesh bronze wire cloth held taut by removable splines. Frames shall have same factory finish as casements.

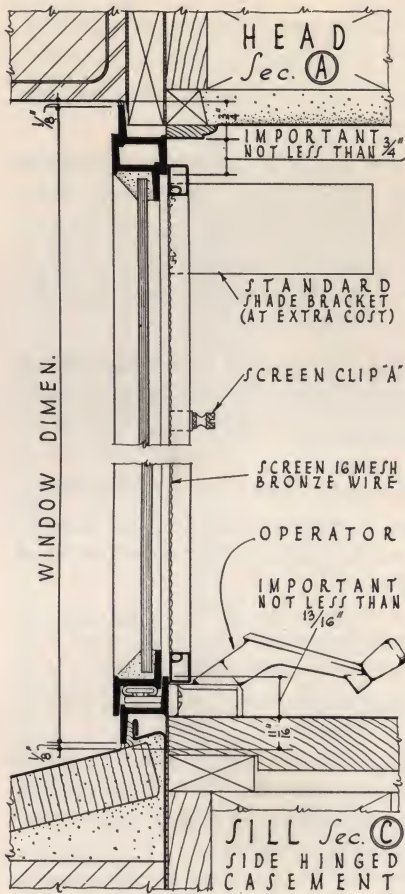
WINTER WINDOWS* — Furnish Lupton Winter Windows for all fixed and ventilated casement windows. Frames shall be metal with same factory finish as casements. Windows shall be furnished glazed with double-thick glass (or 3/16" plate glass, at extra cost) held by removable spring bronze splines. A resilient insulating seal shall be provided between Winter Windows and casement frames. If ventilators are required, specify — Bottom hinged, open-in sill ventilators shall be built into Winter Window frames. Contact between ventilators and frames shall have resilient seal.

PREPARATION FOR SHADE BRACKETS — All casement frames shall be prepared for attaching shade brackets. (Note — Holes are 1¼" center to center.*)

MASTIC — PAINTING — GLAZING — CALKING — INSTALLATION — See page 3.

***ITEMS FURNISHED AT EXTRA COST** — Continuous anchors, solid bronze hardware, special hardware finishes, screens, winter windows, manufacturer's standard shade brackets, mastic, steel window putty.

Lupton RESIDENCE CASEMENTS — Screens — Hardware



Scale for Details 3" = 1'-0"

Screen Details

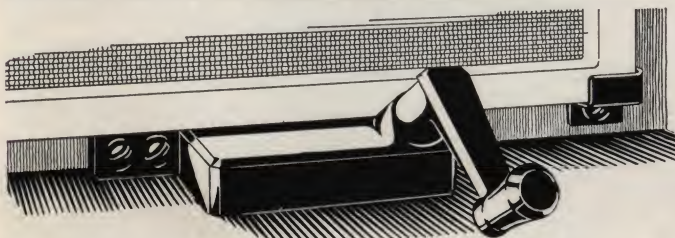
These details show the application of fixed screens to Underscreen Operated Casements.

IMPORTANT

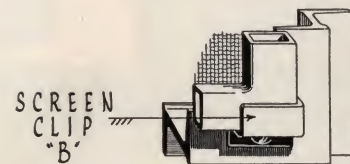
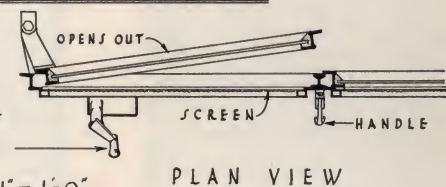
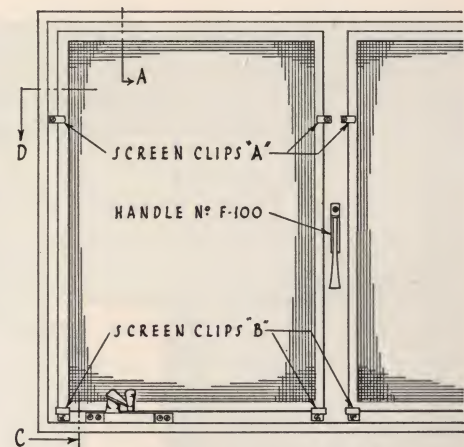
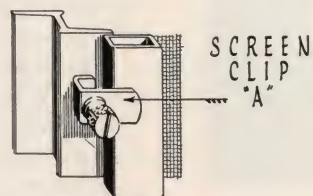
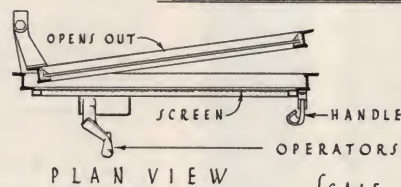
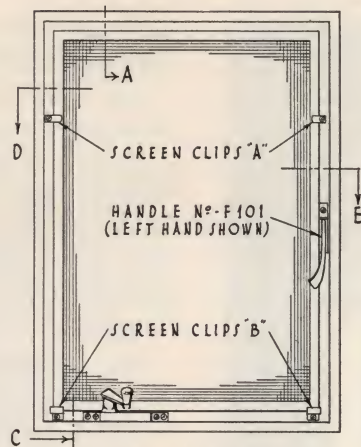
It is very important that plaster and trim be so located that the inside face of the casement frame is clear for a space of $\frac{3}{4}$ " at Head and Jambs and $\frac{13}{16}$ " at Sill as shown on this page. If this margin is not maintained screens and hardware cannot be applied properly.

Hardware

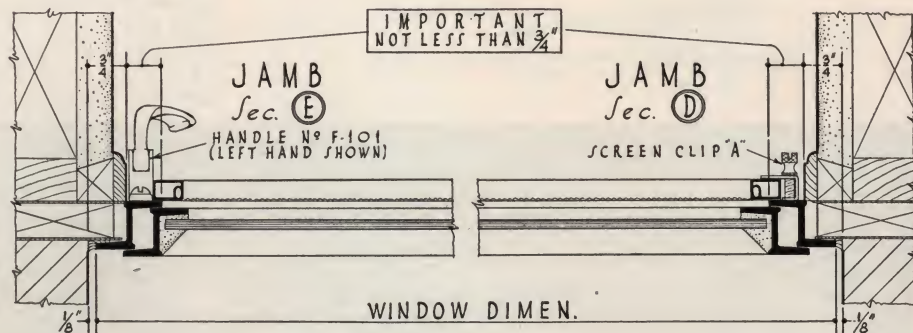
Ventilation is quickly and easily controlled with the Lupton underscreen operator. Casements are held firmly at any degree of opening and can be locked or released without opening the screen. Standard hardware has bronze lacquer finish.



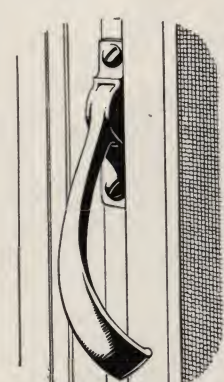
Underscreen Operator No. F-107
(Shown for left hand ventilator.)



Scale 1" = 1'-0"



Handle No. F-100
For double casements



Handle No. F-101
for single casements.
(Shown for left hand ventilator.)

Lupton HOUSING CASEMENTS



Typical Housing Casement with steel casing.
Viewed from inside.
Holes for attaching shades or blinds are located
wherever desired.

Lupton Housing Casements are designed to meet the basic requirements of large-scale housing projects — low initial cost and long-life with minimum expenditure for maintenance.

These casements are built of 1" deep casement sections with welded construction. They will withstand the abuse often encountered in rented properties, retain their fine appearance and give perfect service indefinitely with little or no expense for repairs.

The range of standard sizes and types illustrated on opposite page is designed to meet building code requirements for daylight and ventilation.

Lupton Housing Casements Offer These Advantages

1. *Economical installation* — Windows are complete units — Pressed steel casings can be furnished to eliminate all wood trim and plaster returns.
2. *Conserve wall space* — Comparison with ordinary windows shows smaller over-all dimension for equal glass area. Wall space is made available for furniture and fixtures.
3. *Better ventilation* — Outward opening casements provide controlled ventilation at all times.
4. *Weathertight — Easily operated* — Cannot warp or shrink and will remain easy to operate and weathertight indefinitely.
5. *Safely and easily cleaned* — Extended hinges permit cleaning from within the building.
6. *Easily screened* — Metal frame screens are quickly attached or removed from inside. When windows are closed screens are protected from the weather.

Resettlement administration project
at Greenbelt, near Berwyn, Md.



MICHAEL FLYNN MANUFACTURING COMPANY — PHILADELPHIA

Lupton HOUSING CASEMENTS—Sizes—Details

WINDOW DIMENSION	1'-8 ⁷ / ₈ "	3'-4 ⁷ / ₈ "	5'-0 ⁷ / ₈ "	6'-8 ⁷ / ₈ "				
2'-1"	 901L	 911L	 921	 931	 941	 951	 961	
3'-1"	 902L	 912L	 922	 932	 942L	 952	 962	 972
4'-1"	 903L	 913L	 923	 933	 943L	 953L	 963	 973
4'-1"		 914L	 924		 944L			 974
4'-1"	 905L	 915L	 925	 935	 945L		 965	
5'-1"	 906L	 916L	 926	 936	 946L	 956L	 966	 976
5'-1"		 917L	 927		 947L	 957L		 977
5'-1"	 908L	 918L	 928	 938			 968	

Fixed units are available in all sizes shown.

Windows are viewed from outside. Unsymmetrical units are made left hand as shown or right hand.

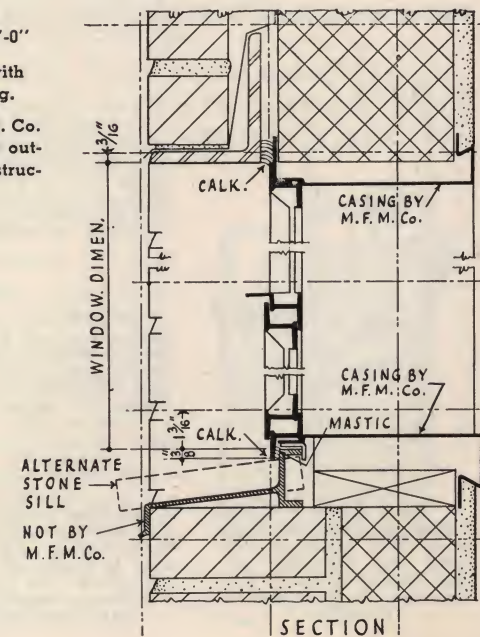
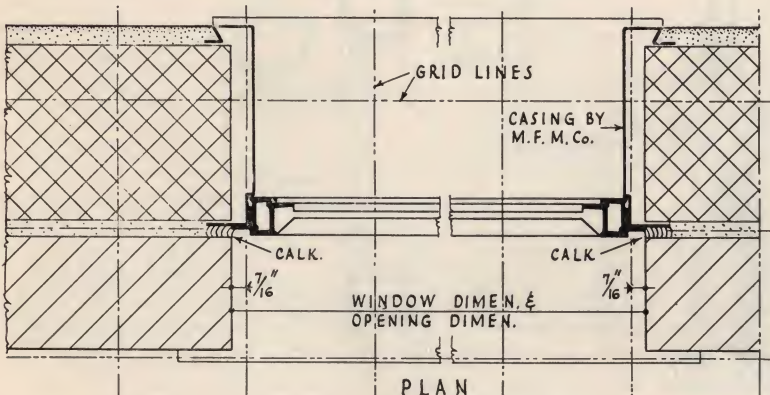
Glass sizes (in inches) — Lights not marked are "A".

- | | |
|-------------------|------------------------|
| A 19-5/8 x 11-5/8 | E 19-3/8 x 11-5/8 |
| B 18 x 11-5/8 | F 20 x 11-5/8 |
| C 18 x 11 | G Consult manufacturer |
| D 19 x 11-5/8 | H for sizes |

Detail Scale 2" = 1'-0"

Built-in Installation with Lupton Metal Casing.

Not furnished by M. F. M. Co.
—Mastic, calking, metal outside sill, flashings and structural steel.



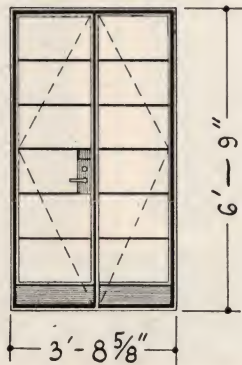
Lupton CASEMENT DOORS

Lupton Casement Doors are made of 1 1/4" deep, specially designed casement sections. Corners are carefully mitered, welded and ground flush. Muntins have flush, interlocking, welded joints at intersections. Three bronze butt hinges are provided for each leaf. Doors are shipped assembled in frames with weathering contacts carefully adjusted.

Standard Doors

Standard size and dimensions are illustrated. Standard doors open out and are designed for outside putty glazing. Standard equipment includes—solid bronze hinges, locking handle, pull, and top and bottom bolts.

Special hardware supplied at extra cost includes—bronze mortise lock with cylinders for one or both sides, dummy handles for inactive leaf, bronze threshold and bronze friction adjusters. Concealed cremorne bolt can be furnished instead of lock if specified.



Double Door — Standard style and size. Mortise lock shown is furnished at extra cost.

Hardware

Hardware is solid bronze. Bronze lacquered finish is standard. Other finishes can be furnished at corresponding cost if specified.

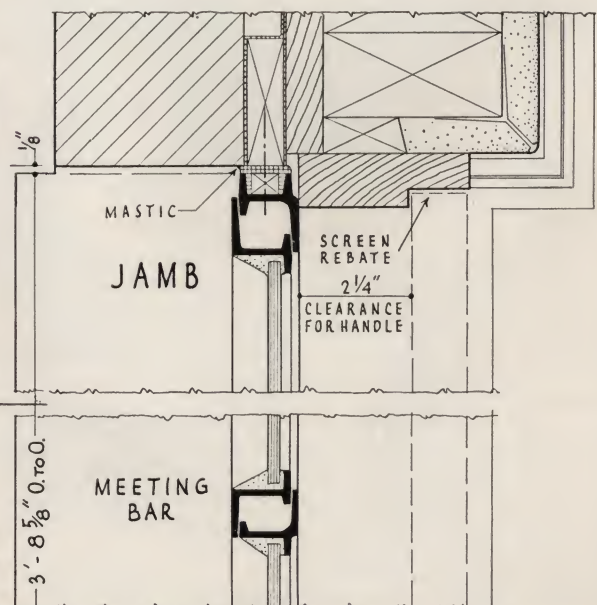
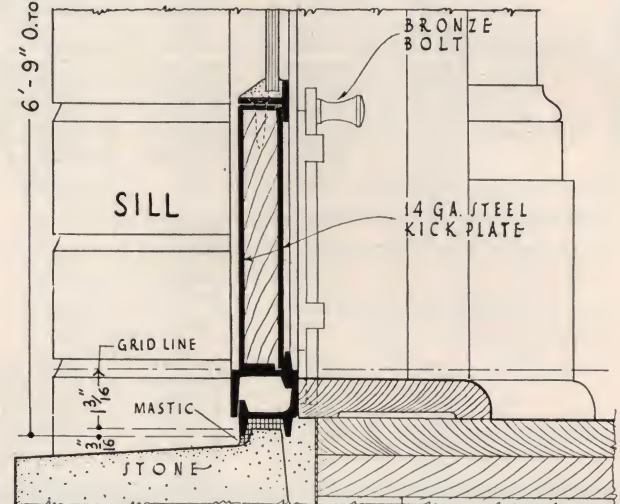
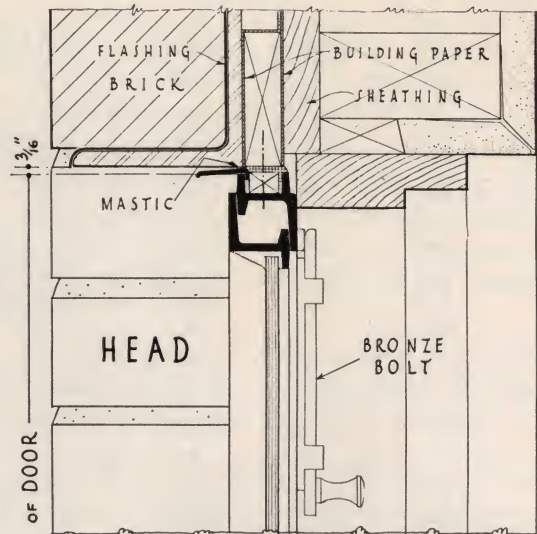
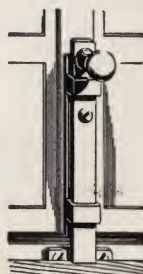


Bronze Mortise Lock.
Furnished when specified at extra cost. Equipped with thumb turn on inside and push buttons in face. May have one or two cylinders if desired.

At right.
Locking Handle No. 315. Furnished for inside of active leaf of standard doors. A Door Pull (No. 321) is furnished for outside of active leaf.

At right, below.
Bronze Top and Bottom Bolts are furnished for all double doors unless Cremorne Bolt is specified. Bottom bolt shown, top bolt is similar.

A Cremorne Bolt can be furnished as an alternate to the Mortise Lock. The case is similar to lock case shown. The vertical rods are concealed when doors are closed.



Structural steel, flashing, mastic, trim not by M. F. M. Co.

Lupton BASEMENT AND UTILITY WINDOWS

Basement Windows

Lupton Basement Windows are designed to give maximum daylight and ventilation. Frames and ventilators are made of hot rolled steel, casement sections. Corners are mitered and solidly welded. Ventilators are hinged at top to swing in and make the entire opening available for ventilation. Double weathering contact is provided and a drip is attached at the sill. Ventilators are easily removed from inside the building.



Basement windows are carried in stock in three sizes. They are furnished unglazed but otherwise assembled with jamb fins and hardware ready for installation. A priming coat of paint is applied at the factory.

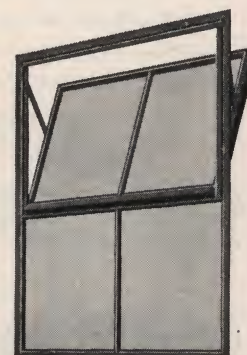
SCREENS — Provision is made for attaching metal frame screens. Screens are furnished at extra cost. They may be attached at any time after installation of windows.

Utility Windows

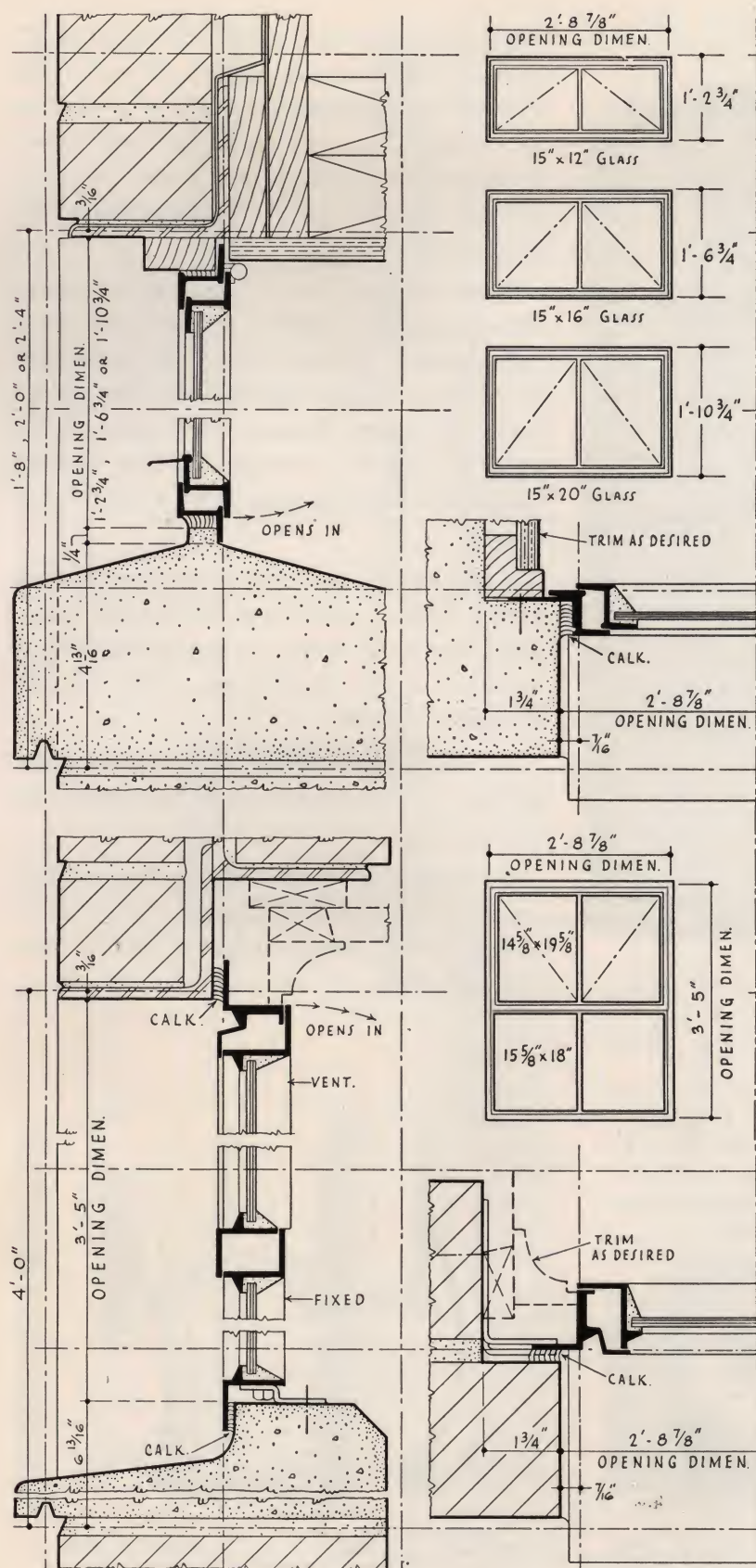
Utility Windows are designed to give maximum light and controlled ventilation in garages, filling stations, small buildings and basements; especially where basement floor is near grade level or where areaways are provided. They are carried in stock by dealers in one size only, as illustrated.

Utility Windows are constructed with an angle-shaped frame section to permit easy installation in various types of wall construction.

Lower half of window is stationary. Upper part opens in at top and is held automatically at any desired position. Spring catch locks window when closed. Glazing is from inside with putty.



SCREENS—Metal frame screens are furnished at extra cost. They may be attached at any time after installation of windows.



Lupton INTERMEDIATE CASEMENTS

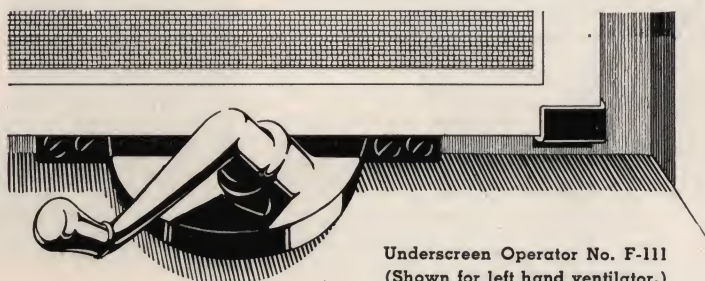
Specification on page 21.



Lupton Intermediate Casement

Hardware

Ventilation is easily controlled with the internal gear, underscreen operator. Casements are held firmly at any degree of opening and can be locked or released without opening the screens. Standard hardware is solid bronze with bronze lacquer finish. Other finishes are available at additional cost.



Underscreen Operator No. F-111
(Shown for left hand ventilator.)

Lupton Intermediate Casements are particularly suited to church and university buildings, clubs, dormitories, apartments and larger residences or wherever fine appearance and perfect performance are required and where windows heavier than the Lupton Residence Casements are desired.

These windows are of the best type casement construction with mitered, welded joints carefully finished. Sections have been redesigned to meet the modern requirement of large glass areas. Half inch "Thermopane" glass may be installed if desired. The equal leg frame permits setting in stone trim or in wood or metal sub-frames.

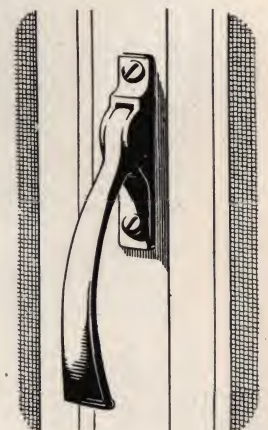
Screened type casements are equipped with heavy, internal gear type, underscreen operators permitting control of ventilation without opening screens. Screens are easily removed for window cleaning.

All casements have extended hinges that permit them to be cleaned safely from inside the building.

Correct design, welded construction and precision adjustment of ventilators at the factory assure lasting weathertightness and trouble-free operation.

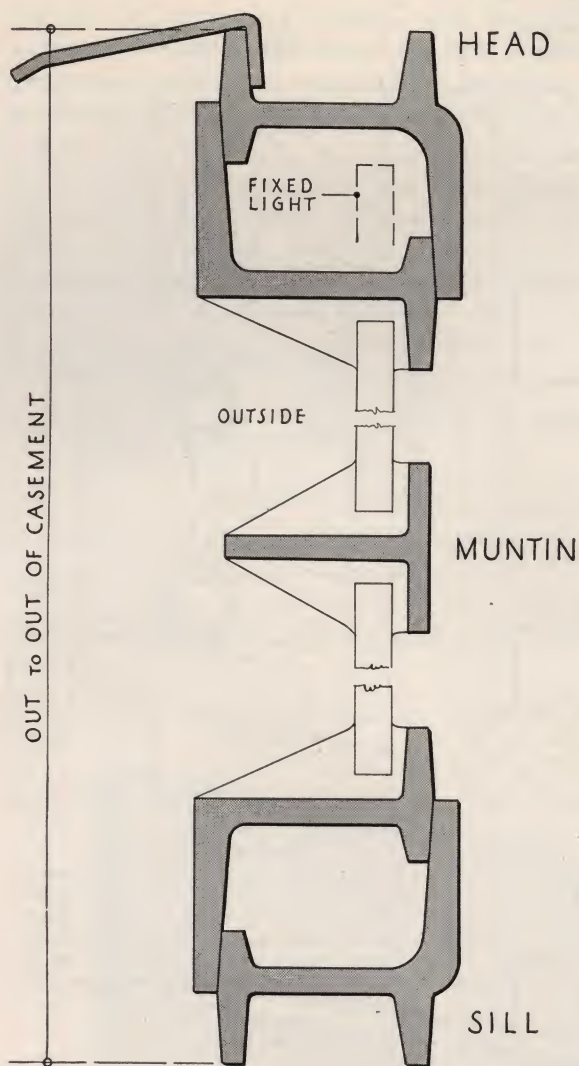


Handle No. F-101.
For single casements.
(Shown for left hand ventilator.)



Handle No. F-100.
For double casements.

Lupton INTERMEDIATE CASEMENTS - Sizes



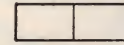
OUT TO OUT OF CAS' MT

1'-0"



11

3'-4 5/8"



21

5'-0 5/8"



31

UNITS 11, 21 AND 31 ARE
FIXED TRANSOMS.
SEE DETAIL BELOW.

DIMENSION OUT TO OUT OF CASEMENT

2'-1"



1212-L



2222

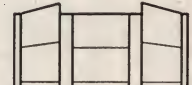
3'-1"



1313-L



2323



3323

4'-1"



1414-L



2424



3424

5'-1"



1515-L

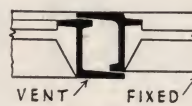


2525

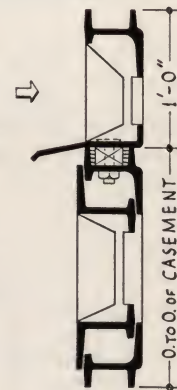


3525

SECTION THRU
FIXED
TRANSOM
SCALE 3" = 1'-0"



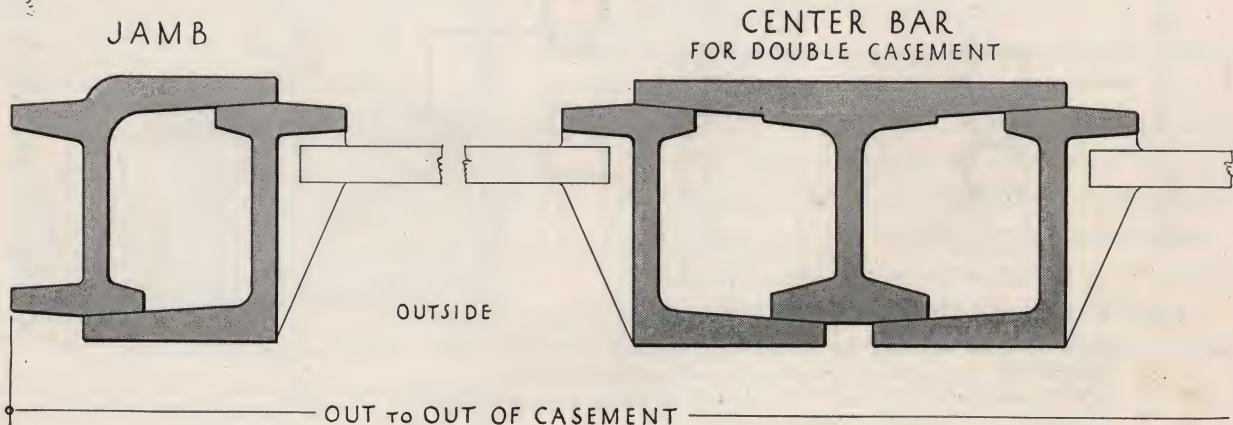
VENT
FIXED
VERTICAL
MEETING BAR



NOTES

- ▶ WINDOWS ARE SHOWN VIEWED FROM OUTSIDE.
- ▶ UNITS WITH ONE VENTILATOR OR ARE MADE LEFT-HAND (AS SHOWN, MARKED "L") OR RIGHT-HAND (MARK "R") AS DESIRED.
- ▶ FIXED UNITS ARE AVAILABLE IN ALL SIZES SHOWN FOR VENTILATED UNITS.
- ▶ HORIZONTAL MUNTINS MAY BE OMITTED.

SECTIONS - FULL SIZE



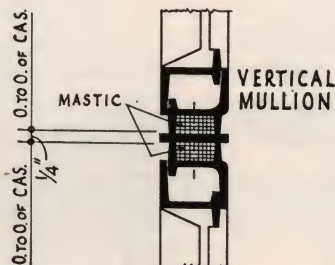
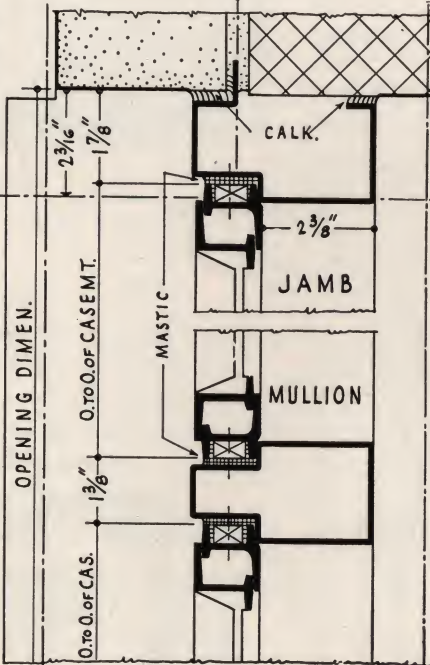
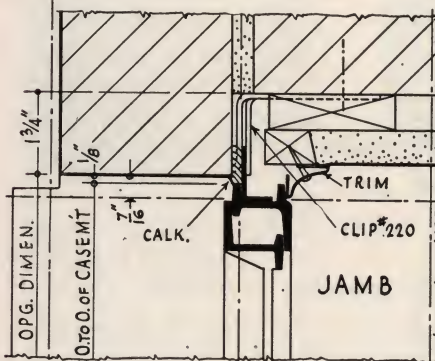
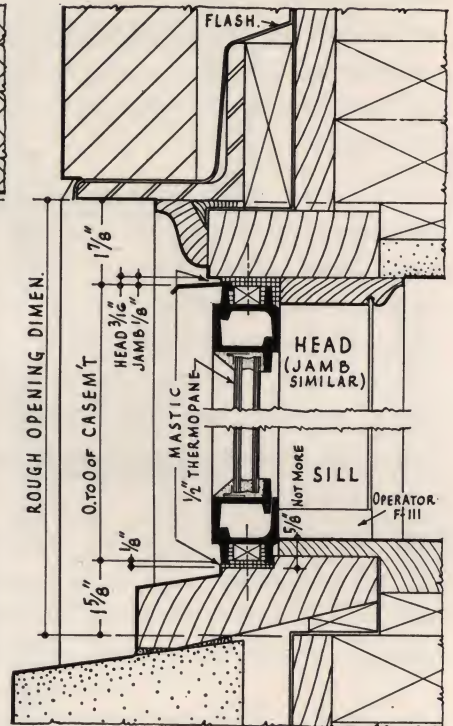
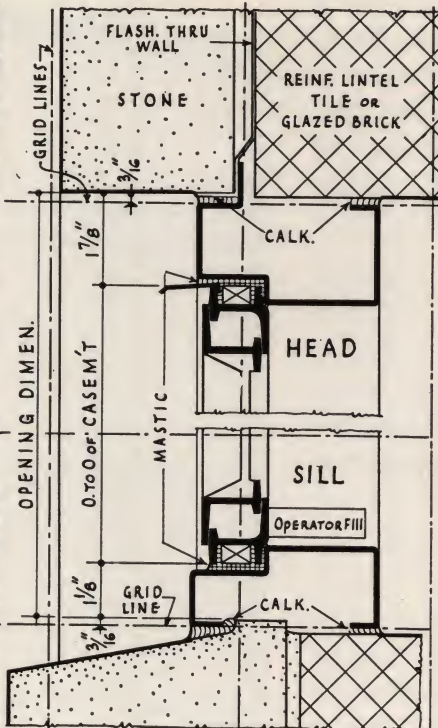
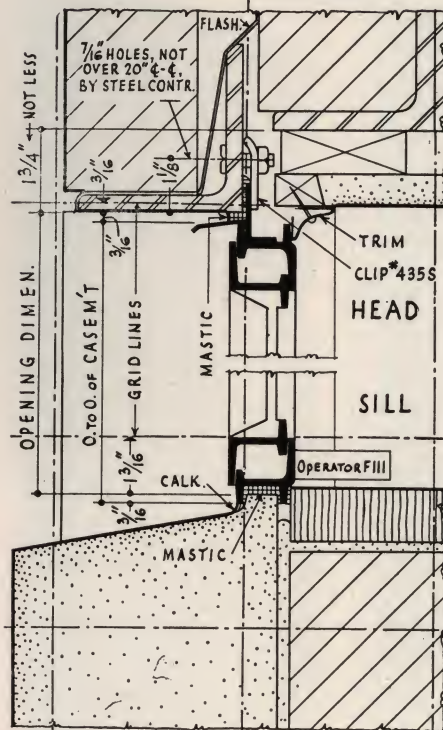
Lupton INTERMEDIATE CASEMENTS

Installation Details Scale 3" = 1'-0"

Solid Brick Walls
Using Continuous Fins.

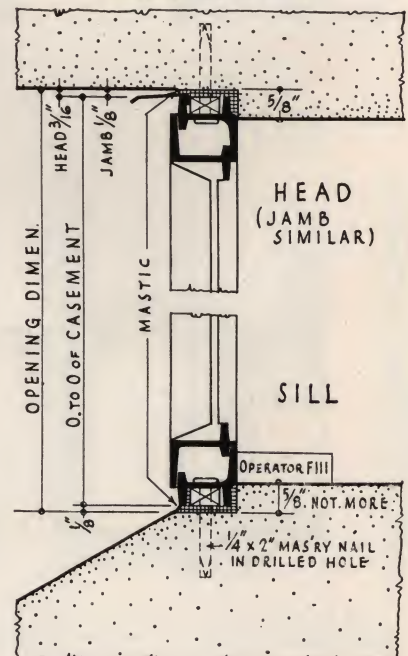
Glazed Brick or Tile Interior
Using Metal Sub-Frames.

Brick Veneer Walls
Using Wood Frames.



"Thermopane" Glazing
If specified, Intermediate Casements will be prepared for glazing with "Thermopane" of 1/2" nominal thickness, using special glazing wedges. When "Thermopane" is to be used all glass sizes should be carefully checked.

Casement Set in Stone.



NOTE: Furnished by M. F. M. Co.: — Anchoring clips and bolts, masonry nails, mullions and bolts for attaching, and (where specified) continuous fins and metal subframes as shown on details above.
NOT furnished by M. F. M. Co.: — Mastix, calking, trim, flashings, structural steel, glass and glazing.

Lupton INTERMEDIATE WINDOWS

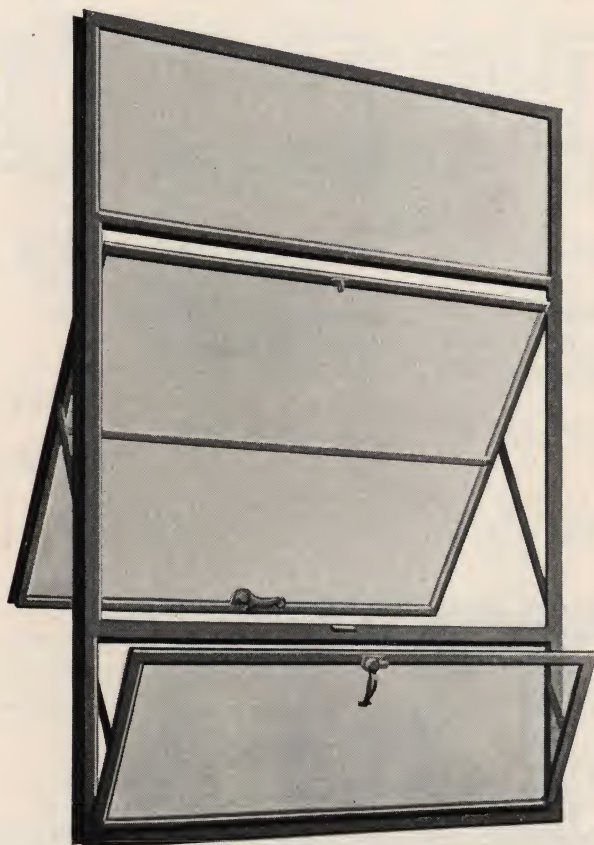
Specification on page 21.

Lupton Intermediate Windows are designed for buildings where permanence and fine appearance are of first importance, monumental buildings, office buildings, and church, school and hospital buildings.

Two general types are available, Intermediate Combination Windows and Intermediate Projected Windows. Both types are highly finished products of the best casement construction. The hot rolled steel sections have been carefully redesigned to meet the requirements of modern building. All joints are welded and ventilators are adjusted precisely to give smooth operation and lasting weathertightness. Sections are of suitable depth for glazing with half inch "Thermopane" glass if desired.

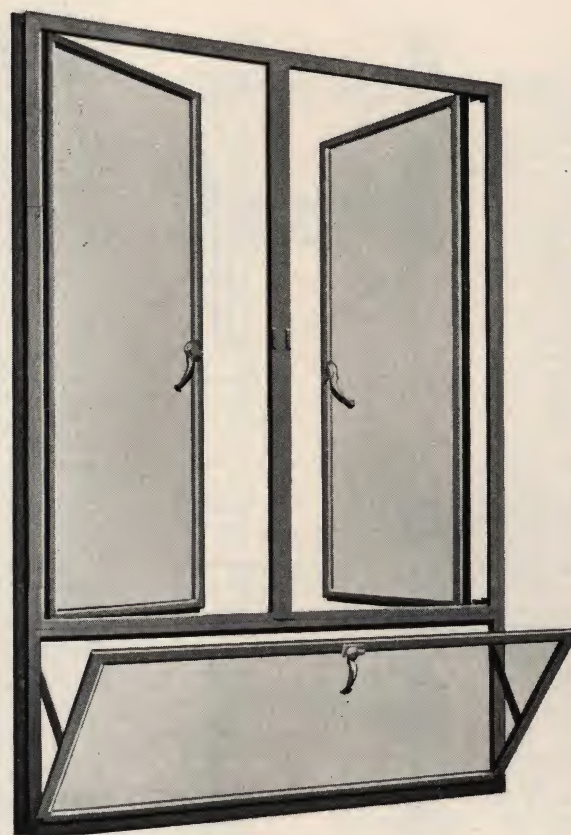
Important Features

Stability—Correct design and all welded construction insures that trouble-free service can be maintained at minimum cost during the life of the building. No warping or sticking due to climatic conditions.



Lupton Intermediate Projected Window.

Often preferred for schools and offices. Outswinging ventilator forms a protecting awning, permitting it to be opened in stormy weather.



Lupton Intermediate Combination Window.

Outswinging ventilators divert breeze blowing parallel to building. Inswinging sill ventilator permits limited ventilation without direct draft for cooler weather.

Screened windows are equipped with the underscreen operating hardware illustrated on page 14.

More Daylight—Larger glass area per square foot of window because frames are narrower.

Ventilation Control—The range of types available makes it possible to match the ventilating requirements of the building. In all types the degree of ventilation is always easily controlled.

Screening—Screens are easily attached, quickly removed.

Operation—Simply and easily operated, ventilators are held firmly at any degree of opening.

Weathertight—Welded construction and careful factory adjustment assure lasting weathertightness.

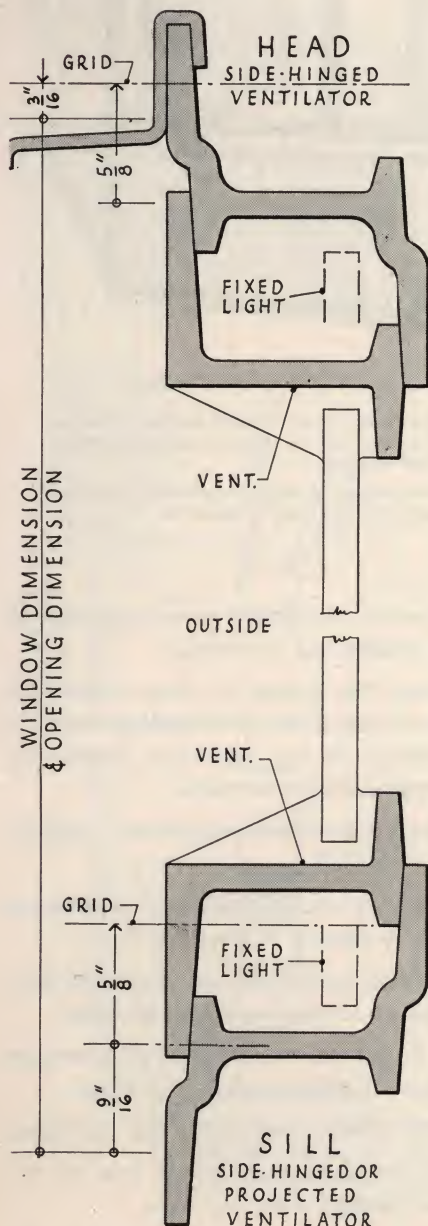
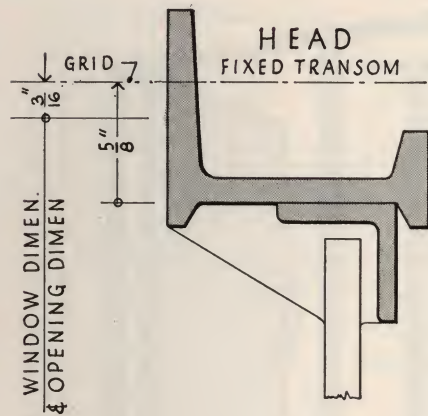
Safety—Firesafe. Project-in ventilator at sill prevents leaning out window, a safeguard for children.

Cleaning—Cleaned safely from inside the building.

Shading—Brackets for shades or blinds can be attached directly to frames.

Lupton INTERMEDIATE WINDOWS

Intermediate Combination Windows—Types and Sizes



WINDOW DIMEN.	1'-8 ⁷ / ₈ "	3'-4 ⁷ / ₈ "	4'-0 ⁷ / ₈ "	5'-0 ⁷ / ₈ "	5'-0 ⁷ / ₈ "	6'-8 ⁷ / ₈ "
2'-9"	601-L	611	621	631	641-L	651
4'-1"	602-L	612	622	632	642-L	652
5'-5"	604-L	614	624	634	644-L	654
5'-5"	605-L	615	625	635	645-L	655
6'-9"	606-L	616	626	636	646-L	656
8'-1"	607-L	617	627	637	647-L	657

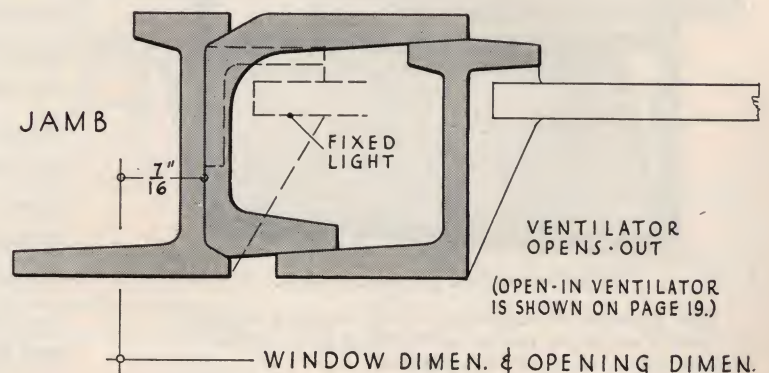
WINDOW DIMENSIONS

NOTES

- ▶ WINDOWS ARE SHOWN VIEWED FROM OUTSIDE.
- ▶ UNITS WITH ONE HINGED-VENT. ARE MADE LEFT-HAND (AS SHOWN, MARKED "L") OR RIGHT-HAND, (MARK "R"), AS DESIRED.
- ▶ FIXED UNITS ARE AVAILABLE IN ALL SIZES SHOWN.

- ▶ FIXED LIGHTS MAY BE SPECIFIED IN PLACE OF SILL VENTILATORS.
- ▶ MUNTINS, IF DESIRED, MAY BE ADDED AS FOLLOWS:
 - HORIZONTAL MUNTINS
SPACED 16" ϕ TO ϕ
 - VERTICAL MUNTINS
SPACED 20" (OR 24") ϕ TO ϕ

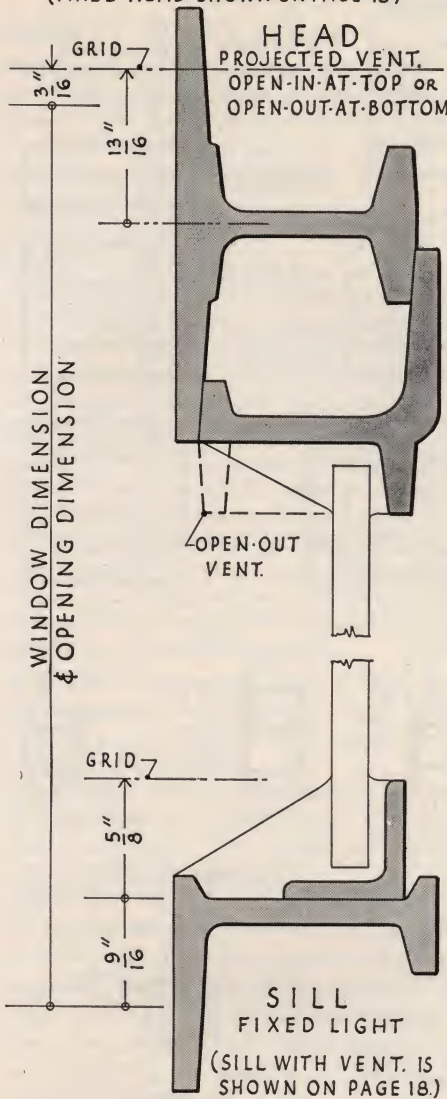
SECTIONS - FULL SIZE



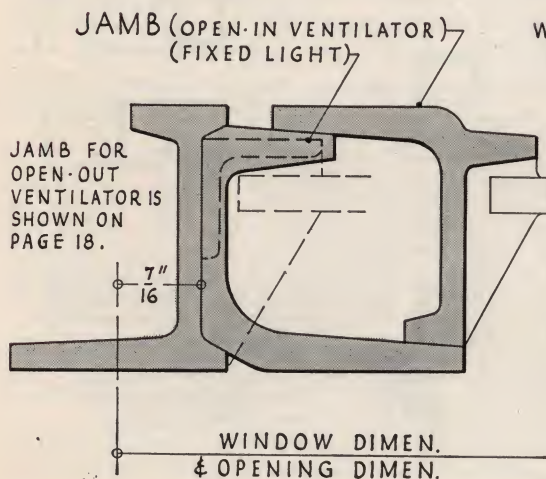
Lupton INTERMEDIATE WINDOWS

Intermediate Projected Windows—Types and Sizes

(FIXED HEAD SHOWN ON PAGE 18)



SECTIONS - FULL SIZE



WINDOW DIMEN.	1'-8 ⁷ / ₈ "	3'-4 ⁷ / ₈ "	4'-0 ⁷ / ₈ "	5'-0 ⁷ / ₈ "	6'-8 ⁷ / ₈ "
1'-5"	401	411	421	431	441
2'-9"	402R	412R	422R	432R	442R
4'-1"	403R	413R	423R	433R	443R
5'-5"	404	414	424	434	444
5'-5"	405R	415R	425R	435R	445R
6'-9"	406	416	426	436	446
8'-1"	408	418	428	438	448
8'-1"	409R	419R	429R	439R	449R
9'-5"	410	420	430	440	450

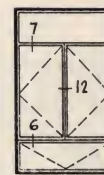
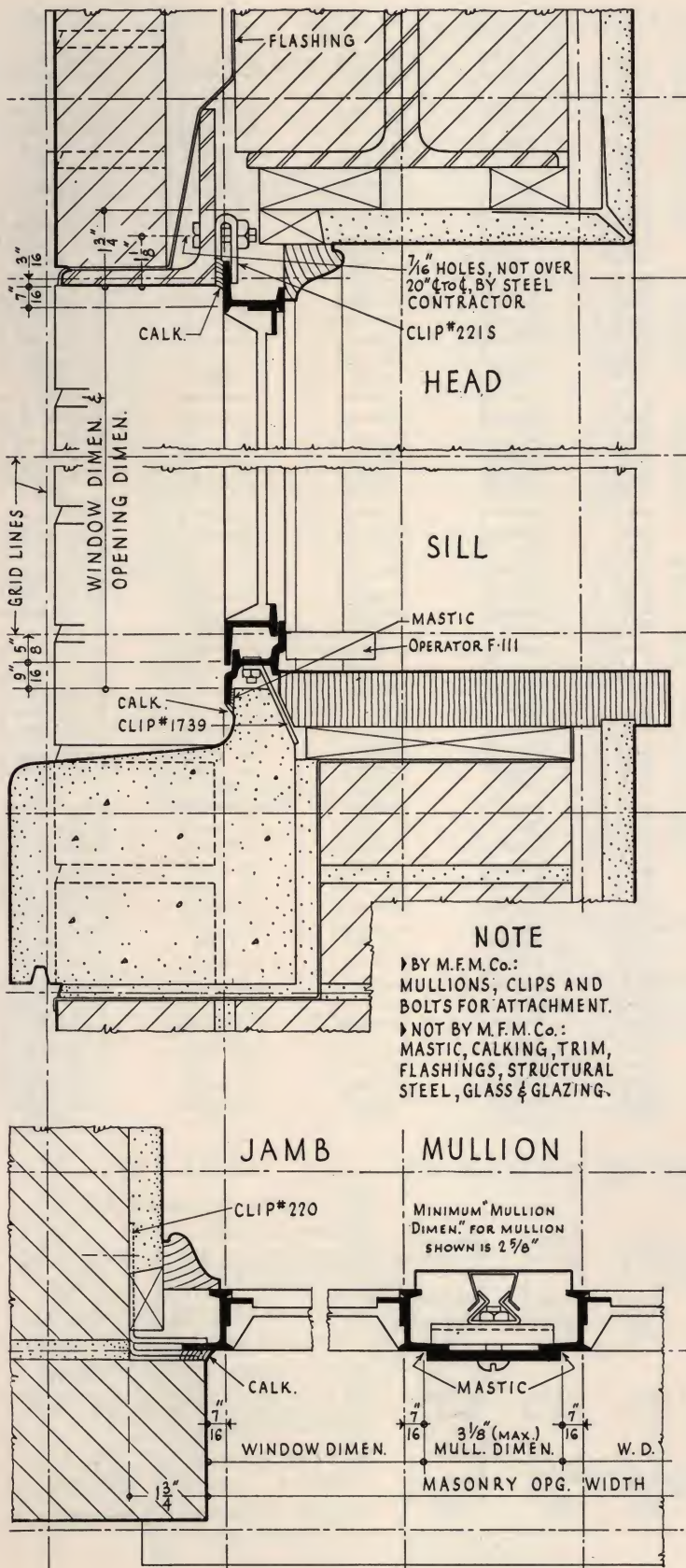
WINDOW DIMEN.	1'-8 ⁷ / ₈ "	3'-4 ⁷ / ₈ "	4'-0 ⁷ / ₈ "
5'-5"	455	465	475
6'-9"	456	466	476

NOTES

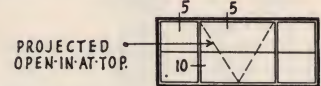
- ▶ WINDOWS ARE SHOWN VIEWED FROM OUTSIDE.
- ▶ FIXED UNITS ARE AVAILABLE IN ALL SIZES SHOWN.
- ▶ OPEN-IN VENTILATORS MAY BE SPECIFIED IN PLACE OF OPEN-OUT VENTILATORS, PROVIDED THAT ALL VENTILATORS IN THE SAME UNIT OPEN-IN.
- ▶ VERTICAL MUNTINS MAY BE ADDED AT $\frac{1}{4}$ OF ANY WINDOW EXCEPT WINDOWS 1'-8⁷/₈" WIDE

Lupton INTERMEDIATE WINDOWS

Details Scale 3" = 1'-0"

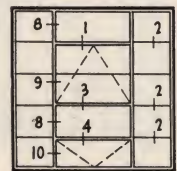
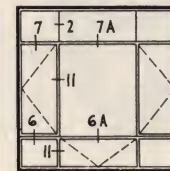
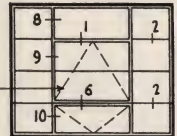


OUTSIDE ELEVATIONS
TYPICAL WINDOWS
KEYED TO SECTIONS
SHOWN BELOW



SIDE-HINGED
OPEN-OUT

PROJECTED OPEN-OUT
AT BOTTOM



1



6

6-A

7

7-A



2



8



3



9



4



10



5



11



12



"THERMOPANE" GLAZING,
USING 1/2" THERMOPANE
AND SPECIAL GLAZING
WEDGES.

Lupton INTERMEDIATE WINDOWS

Specification—Intermediate Combination and Projected Windows and Intermediate Casements.

MATERIAL—All members shall be hot rolled, new billet steel with profiles specifically designed for casement construction. Frame members shall be continuous top to bottom and jamb to jamb. Minimum dimensions and weights shall be as follows—equal leg frame 1¼ in. deep, unequal leg frame 1½ in. deep, ventilator member 1¼ in. deep, combined equal leg frame and ventilator 2.63 lb. per lin. ft.; combined unequal leg jamb section frame and ventilator 4.0 lbs. per lin. ft. Muntins shall be T-bars with not less than ⅞ in. face.

GLAZING PROVISION—All windows shall be designed for outside glazing with putty, using steel wire glazing clips.

CONSTRUCTION—Corners of frames and ventilators shall be carefully coped or mitered and welded along entire line of intersection. Exposed welds shall be finished flush. Two-point, parallel surface weathering contact between one-piece sections shall be provided on all sides of ventilators. Minimum overlap shall be ¼ in. at inside and outside contact points. Continuous drip bar shall be provided over all side hinged ventilators.

VENTILATORS—Side hinged ventilators shall be hung on extended type hinges of heavy steel plate welded to frames and ventilators. Flat bearing contacts shall be bronze to steel. Where underscreen operators are not specified friction shall be provided in the hinges to hold ventilators firmly at open position.

Projected ventilators shall be adjusted to operate smoothly and hold firmly at any position within limits of opening. Each ventilator shall have two heavy steel supporting arms with bronze pivots and two solid bronze friction shoes. Pressure of shoes against jamb channels shall be adjustable, and maintained by two steel compression springs in housings welded to the ventilator corners.

HARDWARE—Operating hardware shall be solid bronze with bronze lacquered finish. (Other finishes are available at extra cost.) Hardware shall be shipped unattached, carefully packed. Provide the following Hardware:

For Screened Ventilators:

Side-hinged:—Roto-type underscreen operator and locking handle.

Projected, open out:—Underscreen operating stay bar.

Projected, open in:—Cam handle or ring type spring catch.

For ventilators not screened:

Side-hinged:—Cam handle and strike plate.

Projected, open out:—Pull ring, ring type handle and strike plate.

Projected, open in:—Cam handle or ring type spring catch.

SCREENS—Provide holes and clips for attaching screens. Screens shall be 16 mesh bronze wire cloth held taut in metal frames by removable splines.

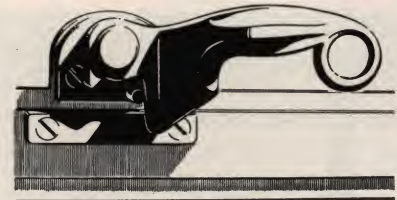
MULLIONS—Provide steel plate mullions and mullion bolts where two or more units are combined in one opening.

ANCHORS—Provide clips, screws, etc., for anchoring in accordance with window manufacturer's standard details. (If specified, continuous fins will be furnished at extra cost for anchoring equal leg frames.)

PRESSED STEEL SUB-FRAMES—Where indicated on plans and elevations, furnish pressed steel sub-frames for metal windows. Sub-frames shall be of 12 ga. steel plate. Joints shall be carefully coped or mitered and welded along entire intersection. Exposed welds shall be finished flush. (See detail page 16.)

SHADE BRACKETS—Provide holes for attaching shade brackets as indicated in details.

PAINTING—GLAZING—INSTALLATION—See page 3.



For Projected Windows.

Ring Handle No. 328 for projected ventilators opening out.



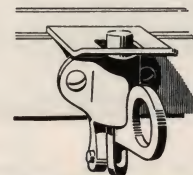
For Combination and Projected Windows.

Locking Handle No. 388 for projected ventilators opening in.



For Projected Windows.

Pull Ring No. 606 located on top rail of projected ventilators opening out.



For Projected Windows.

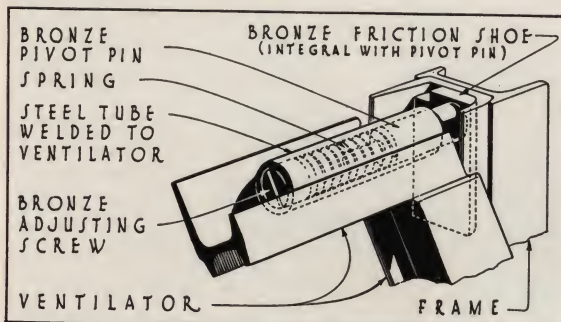
Spring Catch No. 509 located on top rail of projected ventilators opening in, where pole operation is desired.



For Combination Windows (not screened). Locking Handle No. 315 (shown) for left hand ventilators.

Locking Handle No. 316 for right hand ventilators.

Screened casements have hardware as illustrated on page 14.



At left.

The Lupton Friction Shoe assures smooth ventilator operation by providing uniform pressure of shoe against frame at the jamb. Housing for the tempered steel coil spring is solidly welded to the ventilator.

All operating hardware is solid bronze with bronze lacquer finish.

Lupton ARCHITECTURAL PROJECTED WINDOWS



Above.

Koontz Creamery, Baltimore, Maryland.
 Architect—Carl W. Roes, Baltimore, Maryland.
 Contractor—Edgar S. Armacost, Westminster, Maryland.

Lupton Architectural Projected Windows are used in school, office and commercial buildings to provide controlled natural ventilation, abundant daylight and modern appearance at comparatively low initial cost, with minimum expenditure for repairs.

These windows are designed for outside putty glazing. They are sturdily built of special, hot rolled, steel sections. Frame is a heavy, unequal leg channel. Ventilators operate with the Lupton projected movement and are welded at corners to increase rigidity. Double weathering contact is provided. Hardware is of pleasing design in solid bronze.














































The group of standard types and sizes illustrated on opposite page offers a choice in arrangement of ventilators to suit individual requirements, providing flexibility in design and arrangement and economy in installation. Ventilators in upper part of window normally are made to open out to accommodate shades or blinds, but windows are available with all ventilators opening in if desired. Metal frame screens with bronze wire cloth can be furnished for open-in or open-out ventilators.

Below.

Collegeville - Trappe Joint High School at Trappe, Pennsylvania. Architect—W. Marshall Hughes, Reading, Pa. Contractor—Warren B. Zern, Pottstown, Pa.



Lupton ARCHITECTURAL PROJECTED WINDOWS—Sizes

WINDOW DIMEN.	1'-8 ⁷ / ₈ "	3'-4 ⁷ / ₈ "	4'-0 ⁷ / ₈ "	5'-0 ⁷ / ₈ "	6'-8 ⁷ / ₈ "
1'-5"	 201	 211	 221	 231	 241
2'-9"	 202R	 212R	 222R	 232R	 242R
4'-1"	 203R	 213R	 223R	 233R	 243R
5'-5"	 204	 214	 224	 234	 244
5'-5"	 205R	 215R	 225R	 235R	 245R
6'-9"	 206	 216	 226	 236	 246
8'-1"	 208	 218	 228	 238	 248
8'-1"	 209R	 219R	 229R	 239R	 249R
9'-5"	 210	 220	 230	 240	 250

Glass Sizes (in inches)

Glass for unlettered panels is same as for similarly located lettered panels in upper part of column.

A 19-5/8 x 15-5/8	F 37-5/8 x 13-5/8
B 39-5/8 x 15-5/8	G 45-5/8 x 13-5/8
C 47-5/8 x 15-5/8	H 17-5/8 x 14-5/8
D 9-5/8 x 15-5/8	K 37-5/8 x 14-5/8
E 17-5/8 x 13-5/8	L 45-5/8 x 14-5/8

Notes

Windows are shown viewed from outside.

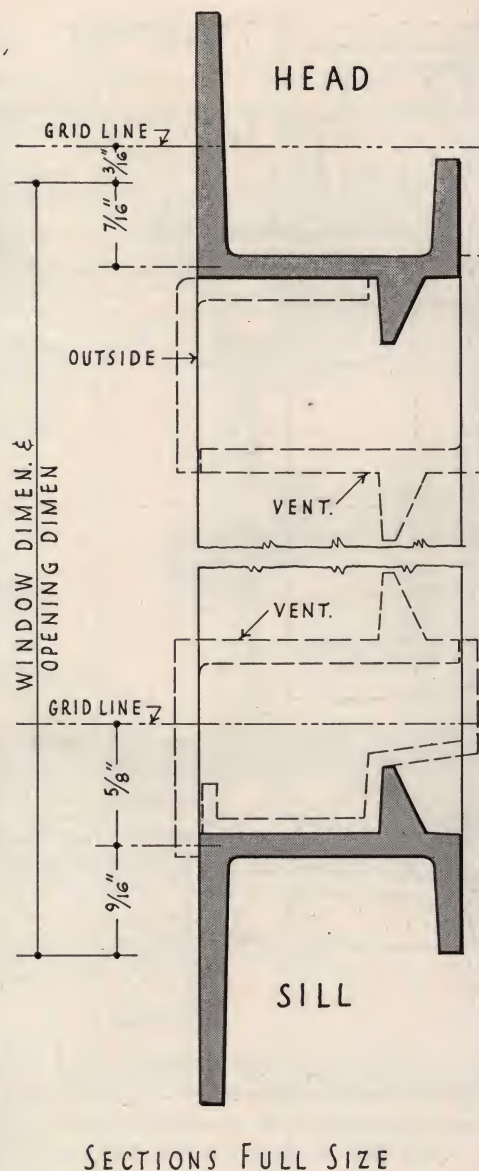
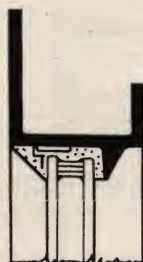
FIXED UNITS—Fixed units are available in all sizes shown.

OPEN-IN VENTILATORS—Ventilators shown opening out may be made open-in, provided that all ventilators in the same unit are made open-in.

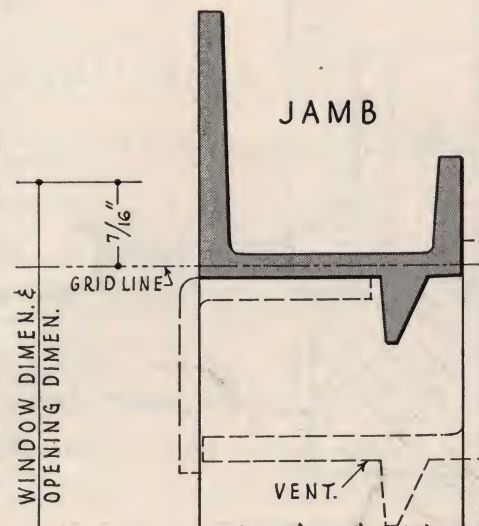
"Thermopane" Glazing

If specified, Architectural Projected Windows will be prepared for glazing with "Thermopane" of 1/2" nominal thickness. All glass sizes should be carefully checked when "Thermopane" is to be installed.

Typical Frame Section Showing Installation of One-half Inch "Thermopane" Scale Half Size.

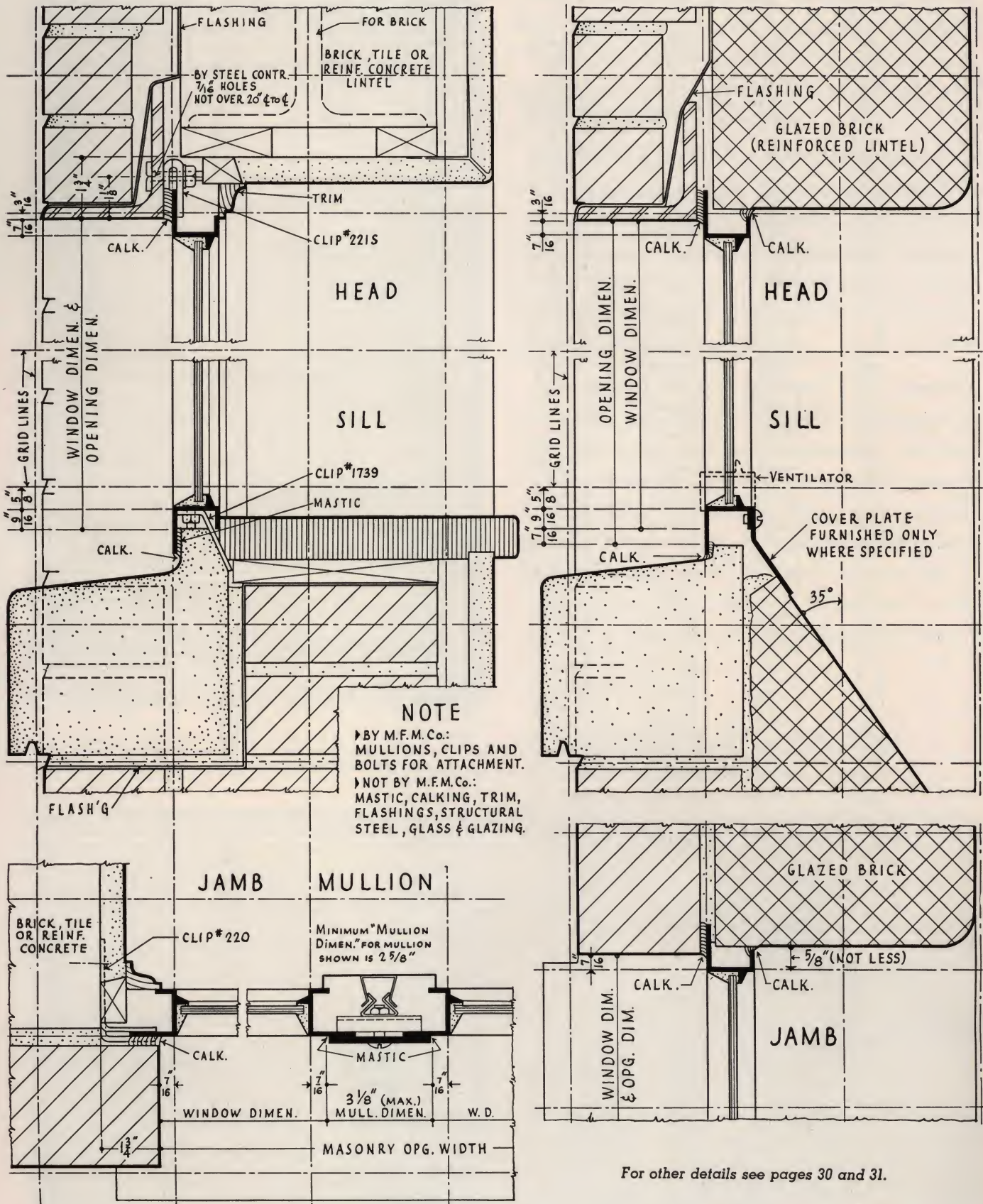


SECTIONS FULL SIZE



Lupton ARCHITECTURAL PROJECTED WINDOWS

Installation Details Scale 3" = 1'-0"



For other details see pages 30 and 31.

Lupton ARCHITECTURAL PROJECTED WINDOWS

Specification

MATERIALS — All frame and ventilator members shall be hot rolled from new billet steel and shall be specifically designed for the manufacture of projected windows. Frame member shall be an unequal leg channel section not less than 1 3/8" deep and weighing not less than 1.6 lbs. per lineal foot.

Ventilator members shall have a minimum depth of 1 1/2".

GLAZING PROVISION — Windows shall be designed for outside putty glazing, using spring wire glazing clips.

VENTILATORS shall make continuous weathering contact on all sides when closed. Ventilators shall open in at top or out at bottom, as indicated on elevations, and shall be designed to operate with the projected movement hereinafter described.

PROJECTED MOVEMENT — Each ventilator shall be equipped with two steel side arms and two bronze friction shoes with flat steel springs. The side arms shall be attached to ventilators and ventilator frames by steel pivot pins with bronze washers between the side arms and ventilators or ventilator frames. The steel springs and friction shoes shall be riveted to the ventilators. Springs shall be adjusted to give smooth operation and also to hold the ventilators firmly at any position within the limits of opening.

ALL JOINTS shall be air-hammer riveted and, in addition, all four corners of the ventilators shall be welded to increase rigidity.

ALL MUNTINS shall be 1 3/8" deep. They shall be continuous and shall interlock at intersections.

ANCHOR CLIPS shall be furnished where indicated on details. **DRIPS** of 16-gauge steel shall be furnished over all open-out ventilators. (Note — Ventilators opening in do not require drips.)

MULLIONS shall be furnished where two or more window units are to be used in one opening. Bolts and clips, as required, shall be furnished for attaching windows at mullions.

HARDWARE — (Standard) — All locking handles, pull rings and spring catches shall be solid bronze with bronze metallic lacquer finish.

Note — Malleable iron handles and steel pull rings will be furnished, when specified, at corresponding cost.

Projected ventilators opening out shall have pull rings and cam action locking handles.

Projected ventilators opening in shall have cam action locking handles or, where tops of ventilators are over 5'-6" from floor, ring-type spring catches for operation by pole. All hardware shall be shipped unattached, carefully packed.

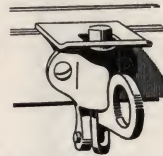
PAINTING — INSTALLATION — GLAZING — CALKING — See page 3.

SCREENS — Screens are furnished at added cost when specified. Two types are available for open-out ventilators — Wicket type, used with hardware described above, or Fixed type, requiring underscreen Push Bar as illustrated on this page. Screens for open-in ventilators are attached outside with clips.

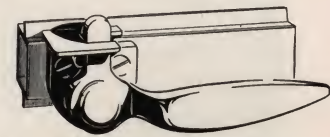
SHADE BRACKET CLIPS and holes for attaching will be furnished at added cost when specified.

Hardware

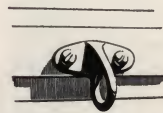
Standard hardware is solid bronze with bronze lacquered finish. Other finishes are available at corresponding costs if specified.



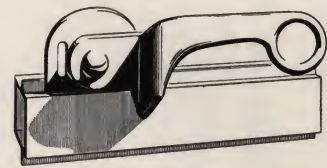
Spring Catch No. 509.
For open-in ventilators beyond reach from floor.



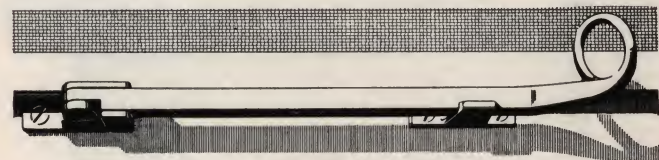
Locking Handle No. 318.
For open-in ventilators within reach from floor.



Pull Ring No. 606.
For open-out ventilators.



Locking Handle No. F-306.
For open-out ventilators.



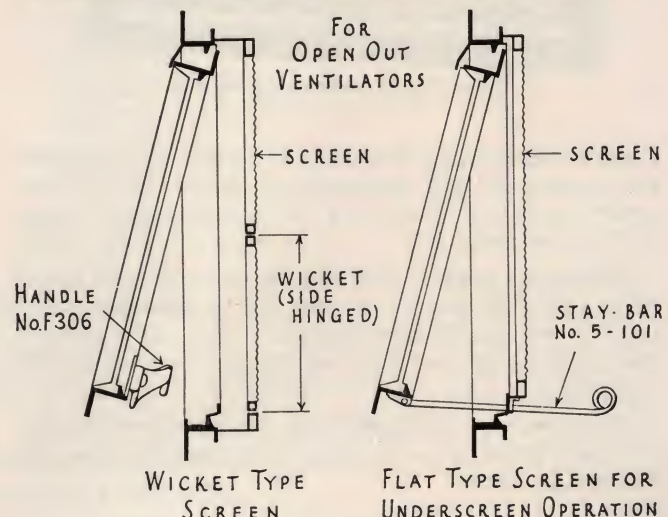
Push Bar No. 5-101.
For open-out ventilators. Furnished where screens of Fixed type are specified.

Screens

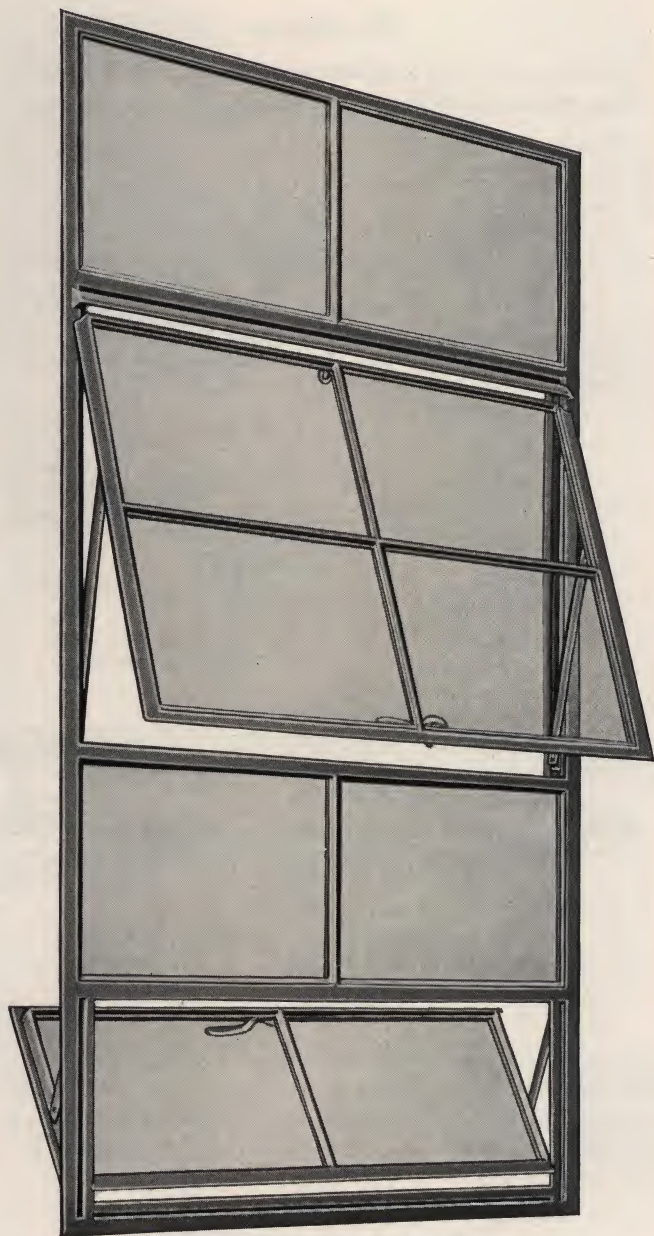
Screens have metal frames and 16 mesh bronze wire cloth.

Screens for open-in ventilators are attached outside.

Screens for open-out ventilators are attached inside. They are available in Wicket type or Fixed type as shown below.



Lupton COMMERCIAL PROJECTED WINDOWS



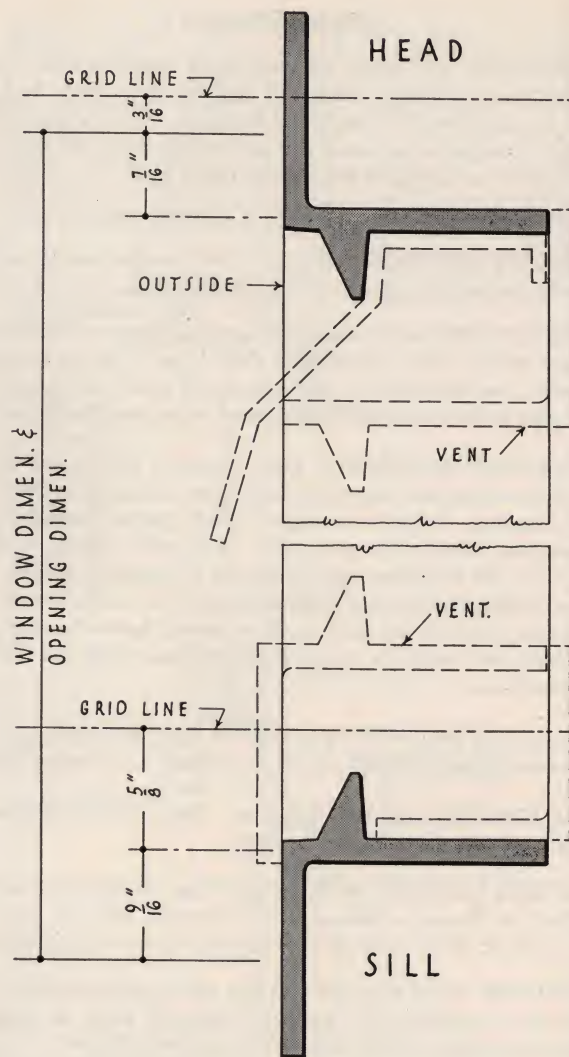
Lupton Commercial Projected Window.
Viewed from outside.

Lupton Commercial Projected Windows are designed for commercial and industrial buildings. As they are easily screened, their use is recommended where screens are required.

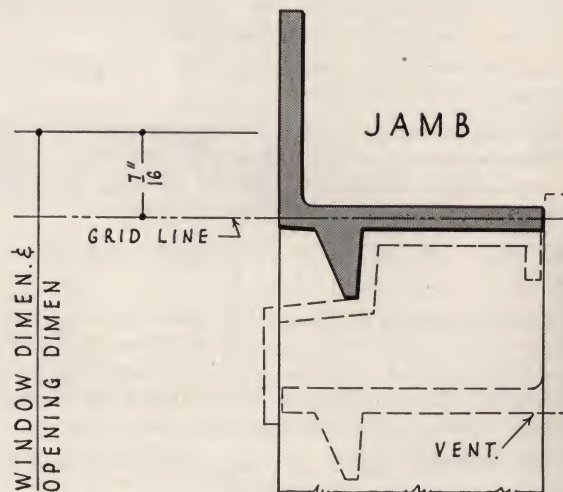
Ventilators operate with the Lupton projected movement and are welded at corners to provide lasting rigidity and trouble-free operation. They may be operated singly by hand or in groups by mechanical operation.

Windows are designed for inside putty glazing. The most generally used types and sizes are normally carried in stock.




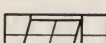



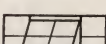



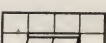



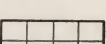





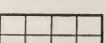







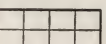







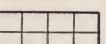




Available with Underwriters' Labels.



SECTIONS FULL SIZE



Lupton COMMERCIAL PROJECTED WINDOWS—Types—Sizes

WINDOW DIMENS. →	1'-8 ⁷ / ₈ "	3'-8 ⁷ / ₈ "	5'-0 ⁷ / ₈ "	6'-8 ⁷ / ₈ "
2'-9"	 A12120	 B22140	 A32120	 A42140
4'-1"	 A13121	 B23141	 A33121	 A43141
5'-5"	 A14121	 B24141	 A34121	 A44141
6'-9"	 A15121	 B25141	 A35121	 A45141
		 B2522402	 A3521202	 A4522402
8'-1"		 B26141	 A36121	 A46141
		 B2622403	 A3621203	 A4622403
		 B262414	 A362214	
9'-5"		 B27141	 A37121	 A47141
		 B2722403	 A3721203	 A4722403
		 B272414	 A372214	
10'-9"		 B28141	 A38121	 A48141
		 B282415	 A382215	
12'-1"		 B29141	 A39121	

Notes

- Indicates warehouse stock types.

Windows are shown viewed from outside.

FIXED UNITS — Fixed units are stocked in same sizes as stocked ventilated types. Non-stock fixed units are available in all other widths and heights shown.

OPEN-IN VENTILATORS — Ventilators shown opening out may be open-in, provided that all ventilators in the same unit are made open-in. This type unit is not stocked.

Glass Sizes (in inches)

For all "A" windows

Fixed lights: A 19-5/8 x 15-5/8

Ventilator lights:

B 17-5/8 x 13-5/8

C 17-5/8 x 14-5/8

D 18-5/8 x 13-5/8

E 18-5/8 x 14-5/8

C	A	E	E	A
C	A	E	E	A
A	A	A	A	A
B	A	D	D	A

For "B" windows only (3'-8⁷/₈" wide):

Fixed lights: K 21¹/₂ x 15¹/₂

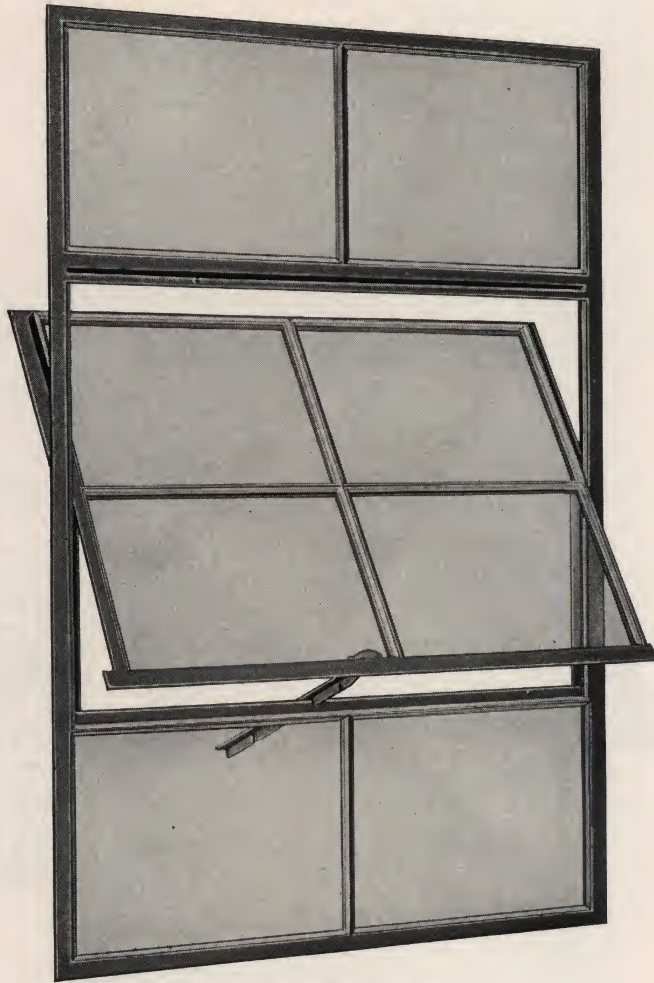
Ventilator lights:

M 20³/₈ x 14³/₈

N 20³/₈ x 13³/₈

M	M
M	M
K	K
N	N

Lupton PIVOTED WINDOWS



Lupton Pivoted Window.
Viewed from outside.

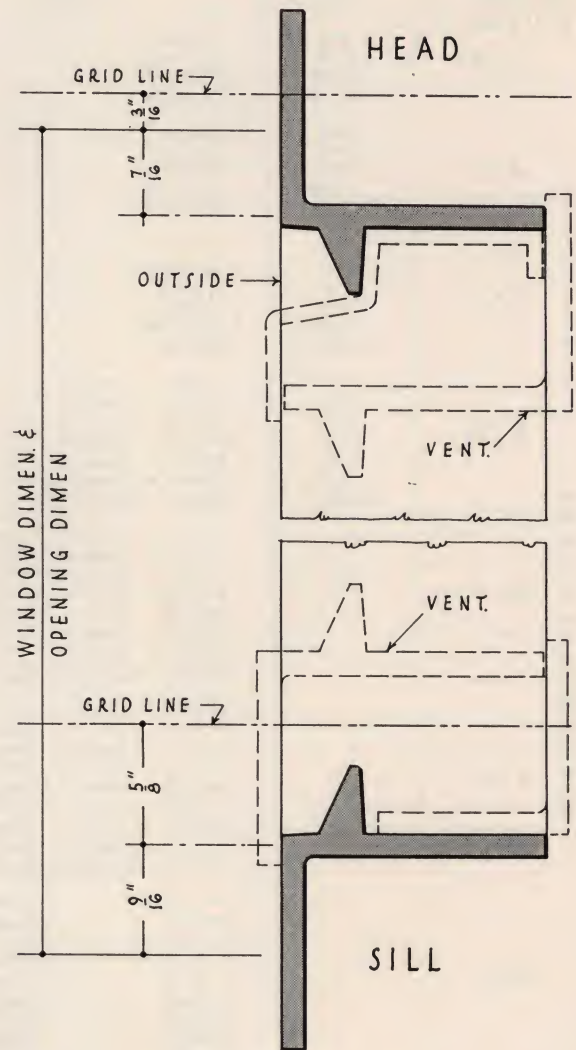
Pivoted windows are the most generally used metal windows for all industrial buildings — sometimes used for commercial buildings where low cost is essential.

Normal requirements for industrial buildings can usually be filled from the range of stock types and sizes.

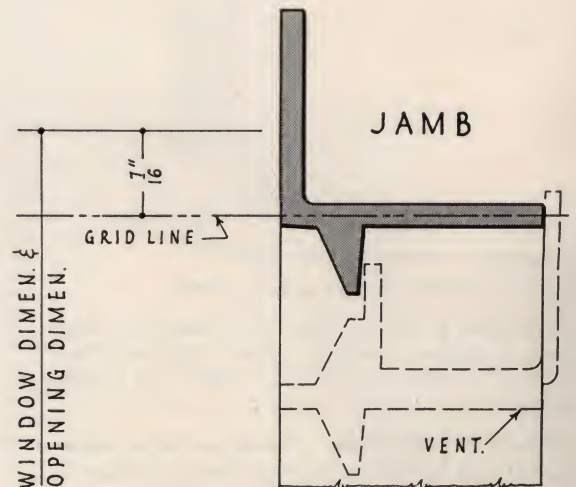
Pivoted windows provide more daylighting and ventilation than any other type window of comparable cost. They are sturdily built of special hot rolled steel sections — designed to give long service. Ventilators are pivoted 2" above the center. Top opens in, bottom opens out. Double contact is provided all around the ventilator.

Ventilators may be operated in groups by mechanical operators or singly by stay bar or spring catch and chain.

Available with Underwriters' Labels.



SECTIONS FULL SIZE

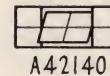


Lupton PIVOTED WINDOWS—Types—Sizes

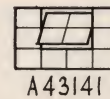
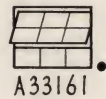
WINDOW
DIMENS. →

WINDOW
DIMENSIONS

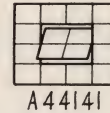
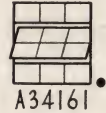
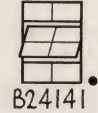
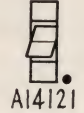
2'-9"



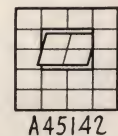
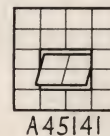
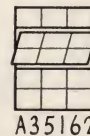
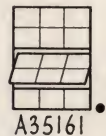
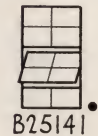
4'-1"



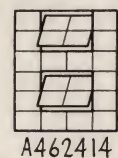
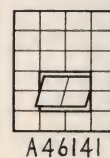
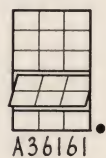
5'-5"



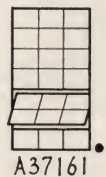
6'-9"



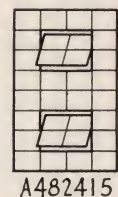
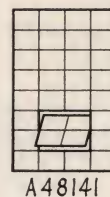
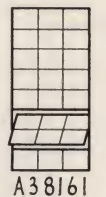
8'-1"



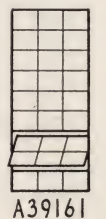
9'-5"



10'-9"



12'-1"



Glass Sizes (in inches)

For all "A" windows:

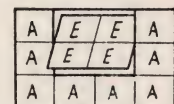
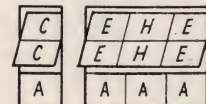
Fixed lights: A 19-5/8 x 15-5/8

Ventilator lights:

C 17-5/8 x 14-5/8

E 18-5/8 x 14-5/8

H 19-5/8 x 14-5/8



Notes

• Indicates warehouse types.

Windows are shown viewed from outside.

FIXED UNITS — Fixed units are stocked in same sizes as stock ventilated types. Non-stock fixed units are available in all other widths and heights shown.

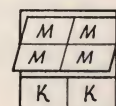
For "B" windows only (3'-8 7/8" wide):

Fixed lights:

K 21 5/8 x 15 5/8

Ventilator lights:

M 20 5/8 x 14 5/8



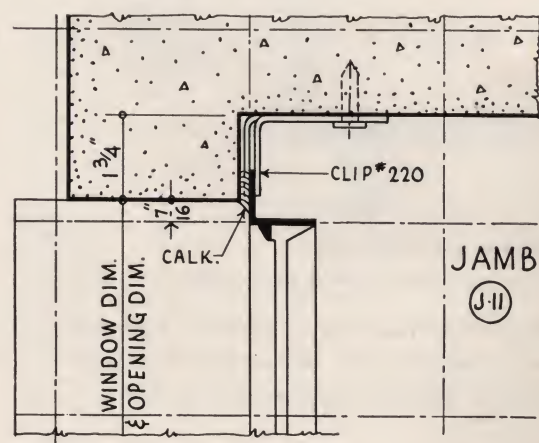
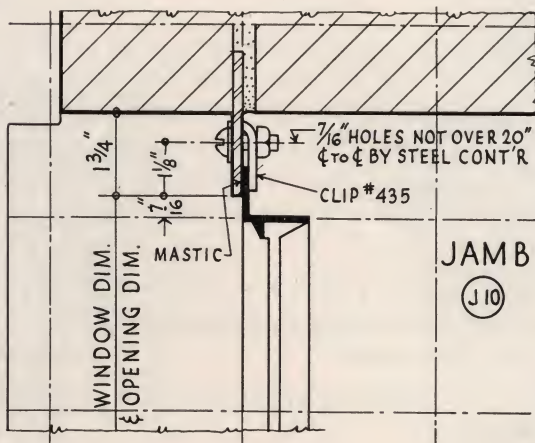
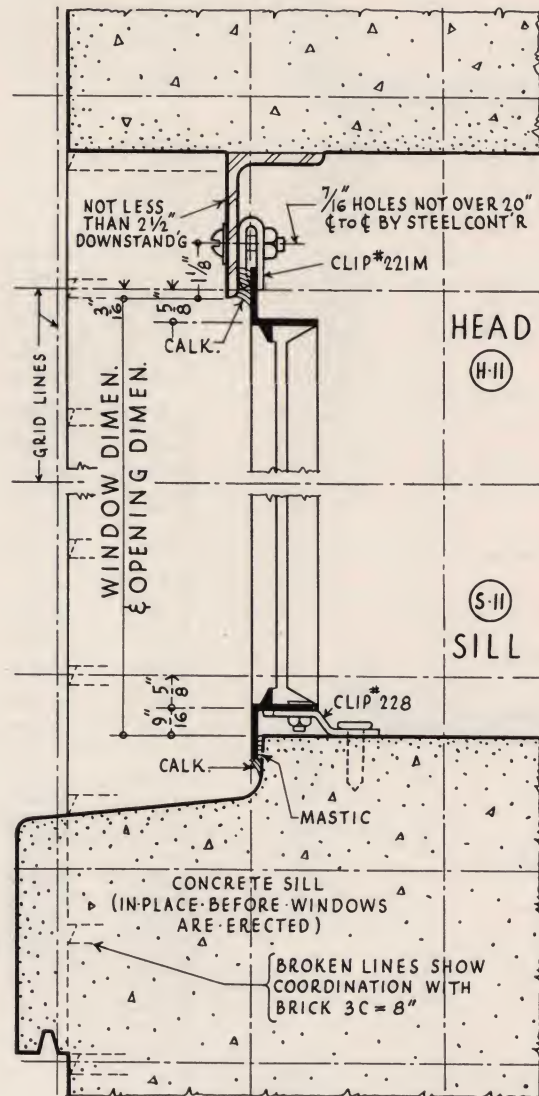
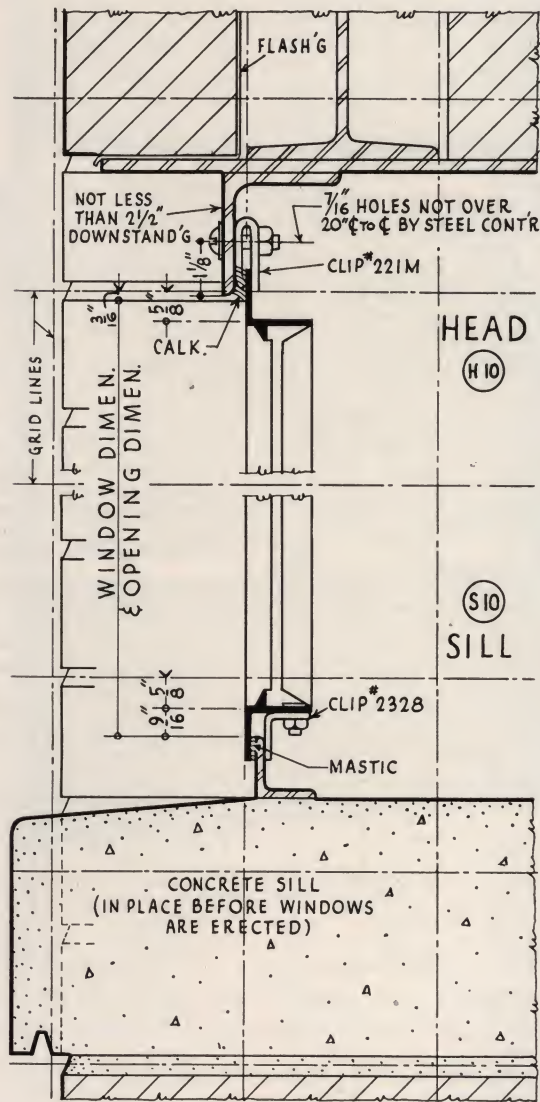
Lupton COMMERCIAL PROJECTED AND PIVOTED WINDOWS

Installation Details Scale 3" = 1'-0"

Note: Practice illustrated here and on page 24 is recommended for highest quality installation. Windows are set in prepared openings and all contacts to steel or masonry are protected by calking or mastic. Windows cannot be distorted by slight deflections in the structure.

Furnished by M. F. M. Co.:—Anchoring clips, and bolts and masonry nails for attaching.

NOT furnished by M. F. M. Co.:—Structural steel, flashings, calking, mastic, glass and glazing.



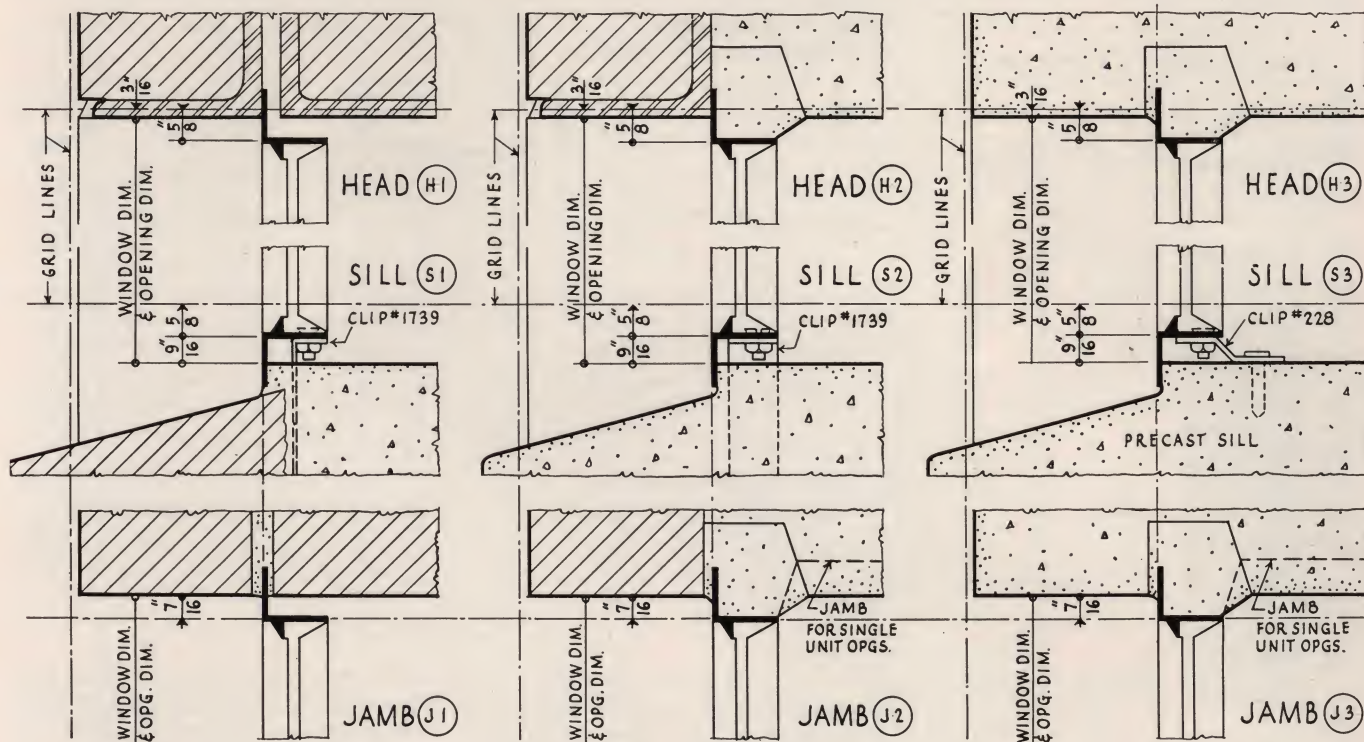
Lupton COMMERCIAL PROJECTED AND PIVOTED WINDOWS

Installation Details Scale 3" = 1'-0"

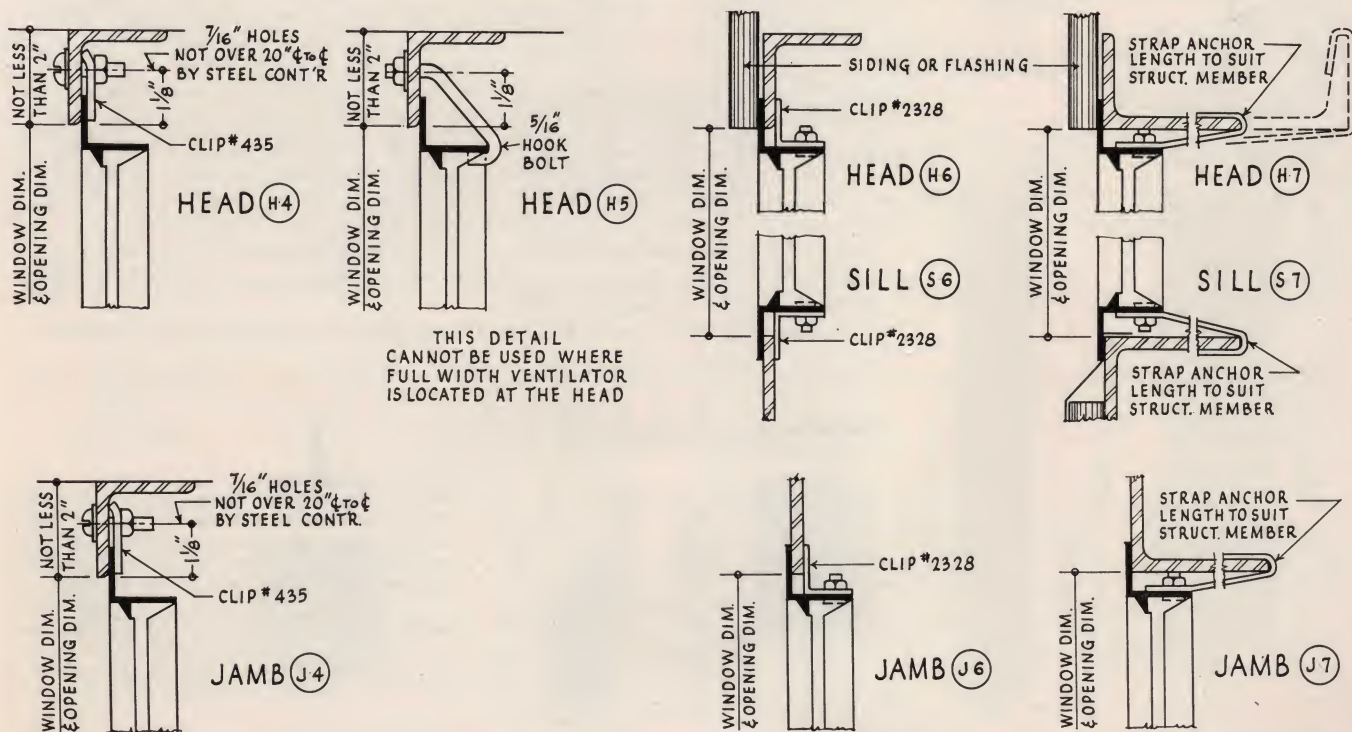
Note: Adequate window performance in industrial buildings may not always require the high quality installation practices previously recommended by the Metal Window Institute and partially illustrated on pages 24 and 30. Less expensive methods that will result in satisfactory service, under favorable conditions, are therefore shown below.

Furnished by M. F. M. Co.:—Anchoring clips and bolts, and masonry nails for attaching.

NOT furnished by M. F. M. Co.:—Structural steel, flashings, grout, calking, mastic, glass and glazing.



Details of Attachment to Structural Steel Scale 3" = 1'-0"



Lupton COMMERCIAL PROJECTED AND PIVOTED WINDOWS

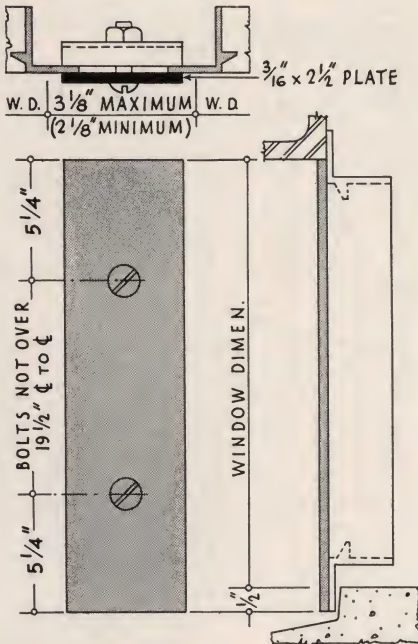
Note:—These mullion details do not apply to Underwriters' Labeled Windows.

Vertical Mullions

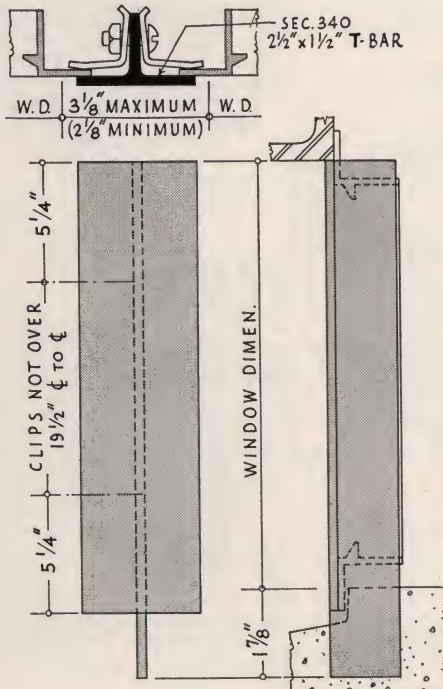
Vertical mullions are $2\frac{1}{2}" \times 1\frac{1}{2}"$ T-bar or $2\frac{1}{2}" \times 3/16"$ plate as required by height of opening.

Mullions detailed below at "A" and "B" are the only types furnished unless others are specified.

A—For windows 2 to 5 lights high



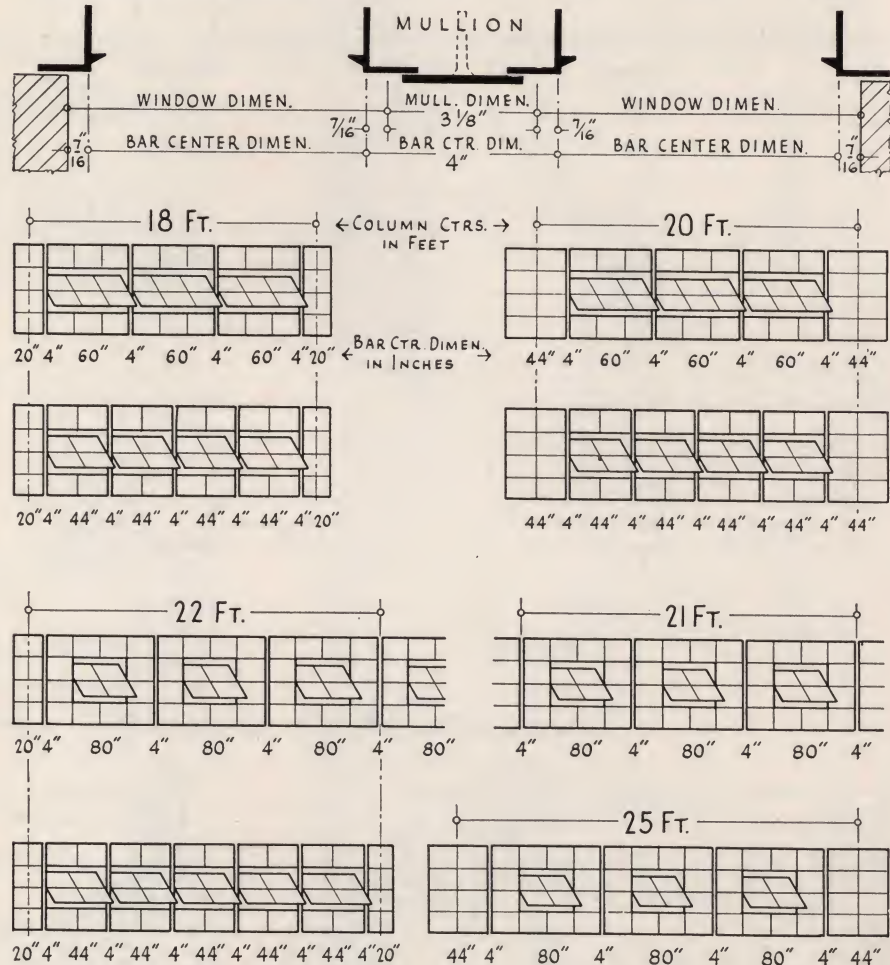
B—For windows 6 to 9 lights high
(Use double T-bar for 9 lights high.)



Bay Arrangements for Windows in Continuous Bands

When laying out long runs of windows it is convenient to use the Bar Center Dimensions instead of the Window Dimensions. Bar Center Dimensions are used in the layouts shown. The 4" dimension at the mullion corresponds to a Mullion Dimension of $3\frac{3}{8}"$. Relation of Bar Center Dimension to Window Dimension is shown below, and is as follows:

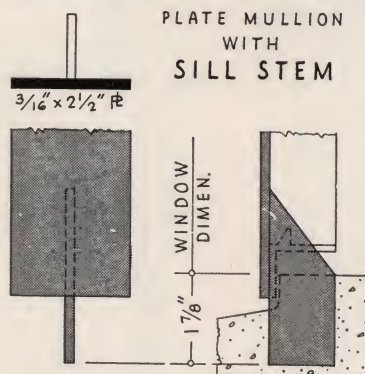
WINDOW DIMENSION	1'-8 $\frac{7}{8}"$	3'-8 $\frac{7}{8}"$	5'-0 $\frac{7}{8}"$	6'-8 $\frac{7}{8}"$
BAR CENTER DIMENSIONS.....	20"	44"	60"	80"



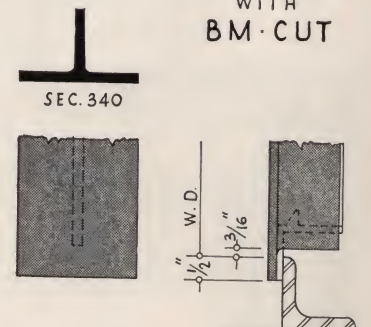
NOTE: For longest and most satisfactory service we recommend the "buttering" of all mullions with mastic. Mastic is not included with the windows and should be furnished by the contractor erecting the windows.

Mullions detailed as shown below are not furnished unless specifically requested.

PLATE MULLION WITH SILL STEM



T-BAR MULLION WITH BM-CUT



Lupton COMMERCIAL PROJECTED AND PIVOTED WINDOWS

Widths for Multiple Unit Openings

(See sketch below)

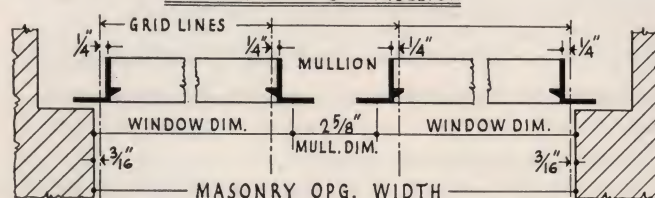
Note:—This table does not apply to Underwriters' Labeled Windows.

Masonry Opening Width	Arrangement of Units in Opening	Number of Lts. Wide	Number of Units	Number of Mullions	Masonry Opening Width	Arrangement of Units in Opening	Number of Lts. Wide	Number of Units	Number of Mullions
3'-8 $\frac{3}{8}$ "	1-1	2	2	1	21'-8 $\frac{3}{8}$ "	4-2-2-4	12	4	3
5'-8 $\frac{3}{8}$ "	1-1-1	3	3	2	23'-8 $\frac{3}{8}$ "	4-2-1-2-4	13	5	4
7'-8 $\frac{3}{8}$ "	2-2	4	2	1	24'-4 $\frac{3}{8}$ "	6 @ 2	12	6	5
9'-0 $\frac{3}{8}$ "	1-3-1	5	3	2	24'-4 $\frac{3}{8}$ "	4-3-3-4	14	4	3
9'-8 $\frac{3}{8}$ "	2-1-2	5	3	2	25'-0 $\frac{3}{8}$ "	3-3-2-3-3	14	5	4
10'-4 $\frac{3}{8}$ "	3-3	6	2	1	25'-8 $\frac{3}{8}$ "	4-2-2-2-4	14	5	4
11'-8 $\frac{3}{8}$ "	2-2-2	6	3	2	25'-8 $\frac{3}{8}$ "	3 @ 2-1-3 @ 2	13	7	6
12'-4 $\frac{3}{8}$ "	3-1-3	7	3	2	26'-4 $\frac{3}{8}$ "	5 @ 3	15	5	4
13'-0 $\frac{3}{8}$ "	2-3-2	7	3	2	27'-8 $\frac{3}{8}$ "	7 @ 2	14	7	6
13'-8 $\frac{3}{8}$ "	4-4	8	2	1	28'-0 $\frac{3}{8}$ "	4 @ 4	16	4	3
14'-4 $\frac{3}{8}$ "	3-2-3	8	3	2	28'-0 $\frac{3}{8}$ "	3-3-4-3-3	16	5	4
14'-8 $\frac{3}{8}$ "	2-4-2	8	3	2	29'-0 $\frac{3}{8}$ "	3 @ 2-3-3 @ 2	15	7	6
15'-8 $\frac{3}{8}$ "	4 @ 2	8	4	3	29'-8 $\frac{3}{8}$ "	4-4-1-4-4	17	5	4
	3 @ 3	9	3	2	31'-8 $\frac{3}{8}$ "	8 @ 2	16	8	7
17'-4 $\frac{3}{8}$ "	3-4-3	10	3	2		4-4-2-4-4	18	5	4
17'-8 $\frac{3}{8}$ "	4-2-4	10	3	2		6 @ 3	18	6	5
18'-4 $\frac{3}{8}$ "	2-3-3-2	10	4	3	33'-0 $\frac{3}{8}$ "	4-4-3-4-4	19	5	4
19'-0 $\frac{3}{8}$ "	4-3-4	11	3	2	33'-8 $\frac{3}{8}$ "	4 @ 2-1-4 @ 2	17	9	8
19'-8 $\frac{3}{8}$ "	5 @ 2	10	5	4		3 @ 3-1-3 @ 3	19	7	6
20'-8 $\frac{3}{8}$ "	3 @ 4	12	3	2	34'-8 $\frac{3}{8}$ "	5 @ 4	20	5	4
21'-0 $\frac{3}{8}$ "	2-2-3-2-2	11	5	4	35'-8 $\frac{3}{8}$ "	9 @ 2	18	9	8
	4 @ 3	12	4	3	37'-0 $\frac{3}{8}$ "	4 @ 2-3-4 @ 2	19	9	8

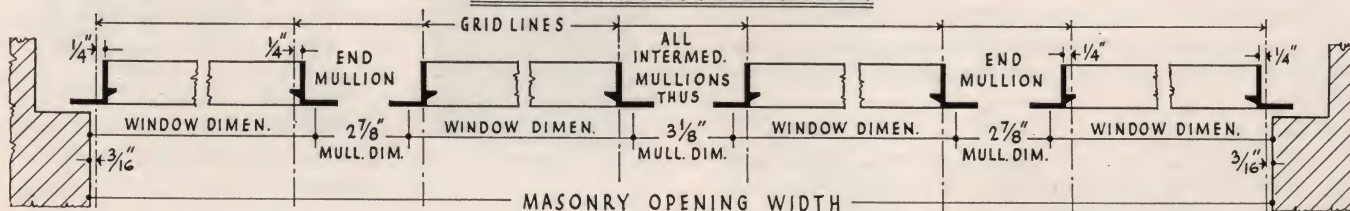
The masonry opening widths shown are based on using Mullion Dimension of 3 $\frac{1}{8}$ " except for mullions nearest to jambs where the Mullion Dimension is reduced to 2 $\frac{5}{8}$ ". Where there is only one mullion in the opening, Mullion Dimension is 2 $\frac{5}{8}$ ". Designers using the 4" module will note that this allows the laying of masonry in its normal position at the jambs.

Variation from widths shown in table may be made by reduction of Mullion Dimension to 2 $\frac{5}{8}$ " minimum.

OPENING WITH ONE MULLION

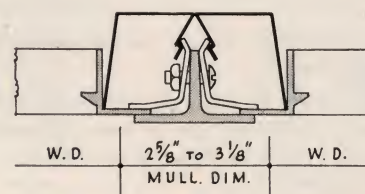
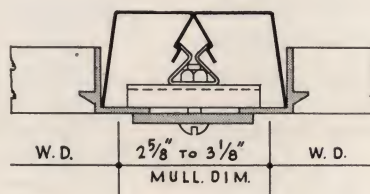


OPENING WITH 2 OR MORE MULLIONS



Mullion Covers

Mullion Covers are snap-on type and are adjustable in width within reasonable limits. Type "A" covers are shown at right. Where mullion dimension is reduced below 2 $\frac{5}{8}$ " a narrower cover (type "B") is furnished wherever mullion covers are specified. Length of cover is always $\frac{1}{8}$ " less than Window Dimension height. If mullion covers are desired they must be specified in contract for windows.



Lupton COMMERCIAL PROJECTED AND PIVOTED WINDOWS

Specification

MATERIAL — Ventilator, frame and muntin members shall be hot rolled steel bars not less than 1 3/8" deep, specifically designed for steel windows.

GLAZING PROVISION — Windows shall be designed for inside putty glazing, using spring wire glazing clips.

Note — Glazing angles (required for Underwriters' Labeled Windows) are furnished where specified at extra cost.

CONSTRUCTION — Both frames and ventilators shall be assembled by tenoned, riveted joints at corners. (Commercial Projected Ventilators shall have corners welded in addition to riveting.) Continuous two-point weathering contact shall be provided between frame and ventilator. All muntins shall be continuous through, and interlocked at, their intersections. They shall be attached to frame or ventilator members by tenoning and riveting.

Commercial Projected Windows shall have ventilators accurately pivoted at sides on two steel arms attached to window frames by steel arm blocks. Each ventilator shall be equipped with two rustproofed flat, steel springs and two brass friction shoes. Friction shoes shall slide vertically in the channels formed by the side weathering of the ventilators with sufficient friction to hold the ventilators in any open position up to the limit of their movement and to prevent rattling.

Pivoted Windows shall have ventilators horizontally pivoted. Pivots shall be located 2" above center line of ventilator. Pivot plates shall be integral with the side weathering. Pivot pins shall be 5/16" iron rivets fastened with cotter pins.

MULLIONS — Manufacturer's standard vertical mullions and bolts for attaching shall be furnished where required.

ANCHORS — Furnish clips of types and sizes to suit construction.

HARDWARE — All hardware shall be shipped unattached, carefully packed.

Commercial Projected Windows:

For open-out ventilators furnish steel pull rings and malleable iron ring type locking handles.

(See **SCREENS** for alternate underscreen operation.)

For open-in ventilators furnish malleable iron locking handles within reach from floor and ring type spring catches beyond reach.

Pivoted Windows:

Furnish steel stay bar and clip for ventilators within reach from floor. Furnish steel spring catch, chain, chain roller guide and clip for ventilators beyond reach from floor.

ERECTION — **GLAZING** — **PAINTING** — See page 3.

SCREENS (for Projected Windows) — All projected ventilators shall be screened to prevent entrance of insects.

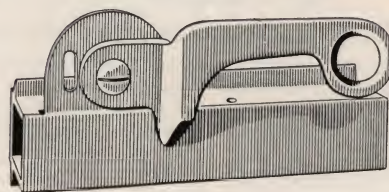
All screens shall have metal frames with 16 mesh bronze wire cloth held taut by removable splines. Frames shall have same factory finish as windows. Furnish clips and screws for attaching.

Screens for open-in ventilators shall be designed for outside attachment.

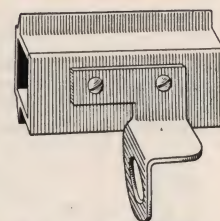
Screens for open-out ventilators shall be:

- (a) Wicket type for use with window manufacturer's standard operating hardware; or
- (b) Flat type. Furnish ring type push bar for operation of ventilator.

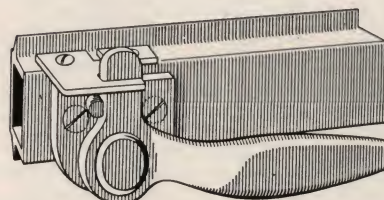
Hardware — Projected Windows



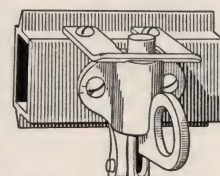
Handle No. F-106—Malleable iron, painted. For project-out ventilators.



Pull Ring No. F-260—Steel, painted. For project-out ventilators.



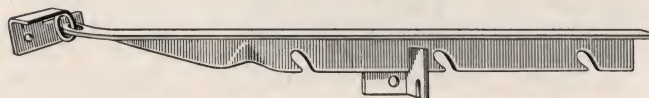
Handle No. 308—Malleable iron, painted. For project-in ventilators within reach from floor.



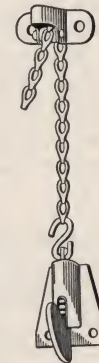
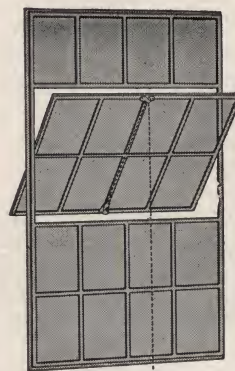
Spring Catch No. 509—Malleable iron, cadmium plated. For project-in ventilators beyond reach from floor.

Hardware — Pivoted Windows

Hardware is steel with painted finish.



Steel Angle Stay Bar No. 3115 and Clip No. 3018. Standard equipment where sill height is not given. This bar locks ventilator tightly shut when inserted in clip as shown.



At Left.

Spring Catch No. 3130 and Chain Guide No. 3102. Where sill height is given on order these are furnished for all ventilators having bottom edges over 6' above floor. Wall Clip No. 2365 or Clip 3018 is furnished for fastening chain when ventilator is open.

NOTE

The following items are furnished at corresponding cost when clearly indicated in original specifications or on drawings and mentioned in contract for windows.

1. Pivoted Windows with pivots located elsewhere than 2" above center of ventilator.
2. Screens for Projected Windows.
- 2a. Underscreen hardware.
3. Continuous glazing angles (these are required on underwriters' labeled windows).
4. Underwriters' labels (page 35).
5. Jamb plates.
6. Bronze hardware.
7. Mechanical operators (page 38).
8. Window cleaners' anchors.
9. Mullion covers.

Lupton COMMERCIAL PROJECTED AND PIVOTED WINDOWS

Underwriters' Labeled Windows

Underwriters' specifications for labeled Pivoted Windows

INFORMATION REQUIRED—Before the windows can be labeled the underwriters' inspector must be informed as to the number and size of units in each masonry opening and the details at head, jambs and sill. The latter is required so that the proper anchoring connections may be furnished.

OPENING SIZES—Single Unit openings may not exceed 84 sq. ft. area. Neither width nor height may exceed 12 ft. Multiple unit openings may not exceed 12 ft. in height. Opening width is not limited, but no unit may exceed 7 ft. in width.

GLASS SIZES—Maximum exposed glass area of single light is 350 sq. in. Maximum dimensions measured tip to tip of glazing angles are 48 in. horizontally, 54 in. vertically.

VENTILATORS—Hinges for pivoted vents must have stop lugs limiting opening to 135°.

No more than two ventilators may be used in a unit.

Maximum area of one ventilator is 20 sq. ft. Maximum dimensions are 5 ft. horizontally, 4 ft. vertically.

NOTE—Ventilators in all standard units meet these requirements for size.

HARDWARE—All hardware must be malleable iron.

Pivoted ventilators are operated by spring catch and chain with fusible link. In some cases a cam handle (No. F-106) or stay bar (No. 3115) may be used.

MULLIONS—Mullions must be "T" section, anchored at head and sill by means of clips or bolts. Consult manufacturer for details.

CONSTRUCTION OF UNITS—Construction is the same as for the Lupton Standard Pivoted Windows with addition of glazing angles and expansion interlocks.

Curved or splayed head units cannot be labeled.

GLAZING ANGLES—Glazing angles (9/16 x 1/2 x 1/16 in.) must be fastened to the window sections with steel screws. The 9/16 in. leg must be upstanding.

NOTE—Small lights up to 100 sq. in. in area may have 5/16 in. upstanding leg.

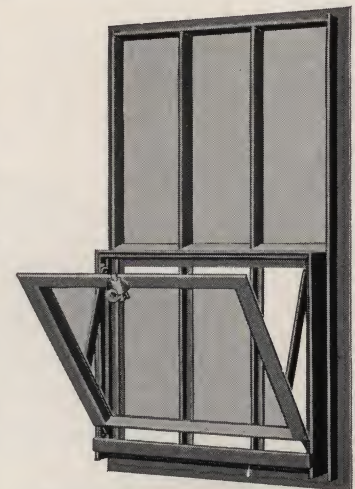
GLASS—Glass must be 1/4 in. thick wire glass.

ANCHORING—Anchoring details must be approved by the Underwriters' inspector. Consult manufacturer for details.

Security Windows

The Lupton Security Window combines the advantages of a neat appearing, ventilating, steel window with security against entrance. It is recommended for use in warehouses, stores and all openings near ground level where, ordinarily, grilles are required.

CONSTRUCTION—As illustrated at right the security feature is provided by a main frame with muntin bars spaced to give small openings of about 6" x 16". The ventilator opens inward with the Lupton projected movement and will remain at any degree of opening desired.



Security Window viewed from inside. Ventilator shown partly open. Glazing lights shown shaded.

The general construction, the operation of the ventilators and the steel sections used are the same as used in Lupton Commercial Projected Windows.







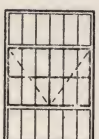

SCREENS—All windows are prepared to receive screens. Screens have metal frames and bronze wire cloth. They may be applied any time after the windows have been installed.

Screens and fittings for attaching are furnished when specified, at extra cost.

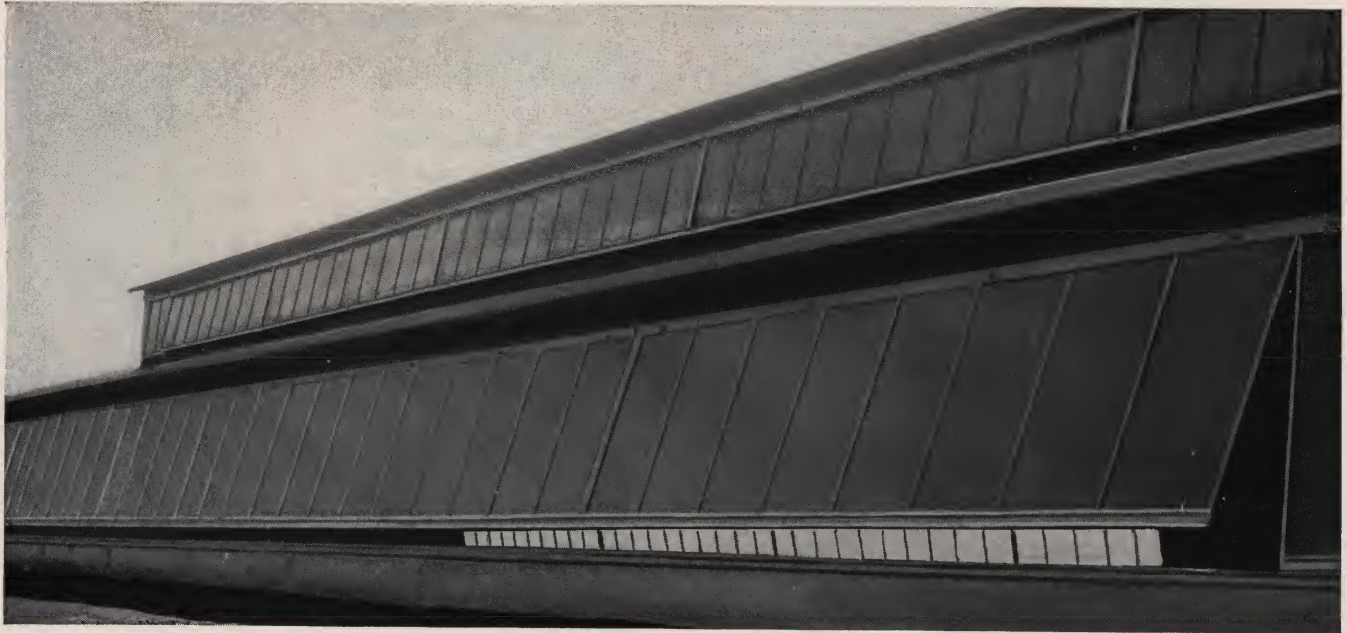
INSTALLATION—The method of installation is the same as for Commercial Projected Windows (see pages 30 and 31).

Stock Sizes

See page 26 for measure points.

WINDOW DIMENS.	1'-8 7/8"	3'-8 7/8"	3'-8 7/8"	5'-0 7/8"
2'-9"	 32130	 B-62160	 B-62	
4'-1"	 33160	 B-631120		 931180
5'-5"		 B-641121		 941181

Lupton CONTINUOUS WINDOWS



Lupton Continuous Windows provide an effective and economical method of daylighting and ventilating industrial buildings. As the opening is always shielded, large sections of the roof can be opened for ventilation even in stormy weather. Standard window panels 20 ft. long are joined end to end with expansion covers to form a continuous top hinged window up to 100 ft. or more in length that can be operated as a single unit. Operated runs on roofs usually have a stationary end panel 2 ft. long at each end. If specified, a storm panel is furnished at each

end of run as additional weather protection. Muntins are spaced approximately 2 ft. apart and over-all lengths of runs should be a multiple of 2 ft.

Heights of panels, openings, and glass are as follows:—

Units	Opening	Glass
3' high	2'-10½"	33" long
4' high	3'-10½"	45" long
5' high	4'-10½"	57" long

Panels 6 ft. high are available but are not recommended.

Specification

MATERIALS AND CONSTRUCTION — Bars are hot rolled steel, specially designed for continuous windows. Sill rail is designed to be flush with glass on outside. All connections are solidly welded. Expansion covers are 14 gauge steel plate.

GLAZING — Designed for outside putty glazing with ¼" wire glass. Glass to be bedded in putty and held by glazing wedges. Wedges are furnished as follows: 4 per light for 3 ft. and 4 ft. panels, 6 per light for 5 ft. and 6 ft. panels.

HARDWARE — Steel clips are provided for anchor-

ing storm panels and stationary windows. Hinges for operated windows are spaced not over 4'-0" apart.

OPERATION — Consult manufacturer for type of mechanical operator best adapted to the requirements of the installation.

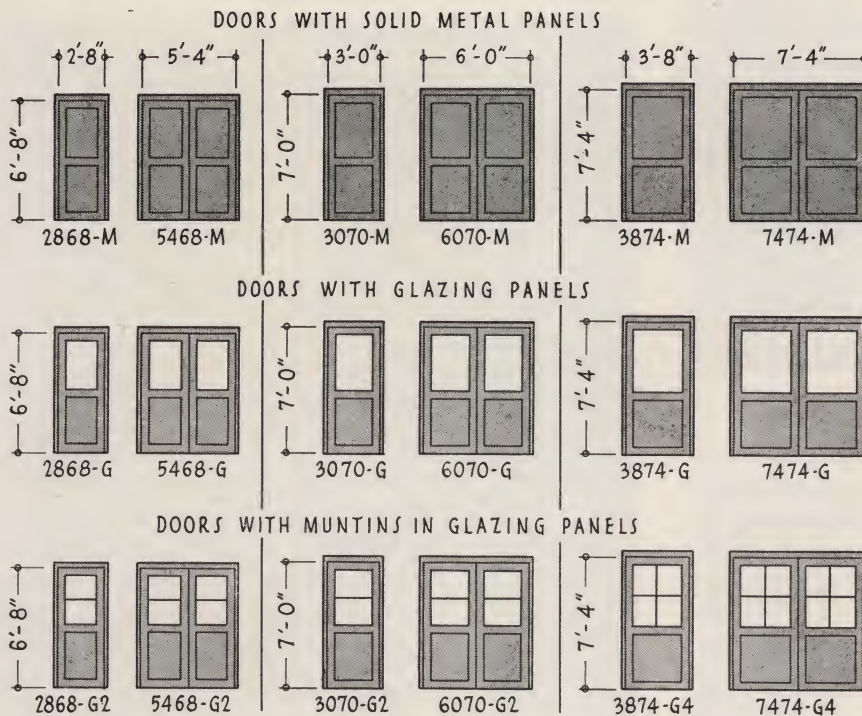
FACTORY FINISH — All parts receive a protective coat of manufacturer's standard paint at the factory.

INSTALLATION — It is recommended that windows be installed by the manufacturer.

Page thirty-seven

Lupton INDUSTRIAL DOORS — Sizes — Hardware

Swing Doors and Frames for Small Openings — Dimensions shown are Door Dimensions.



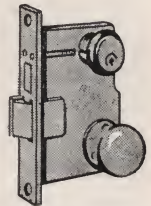
These smaller doors are furnished with pressed steel frames. Frames and doors are prepared for attaching hardware. Doors may also be installed in structural steel frames, but such frames are not furnished or machined by M. F. M. Co.

The following hardware is available. The pieces of hardware required for each door must be specified. Mortise lock, half surface hinges (1½ prs. per leaf), push and pull plates, top and bottom bolts for double doors.

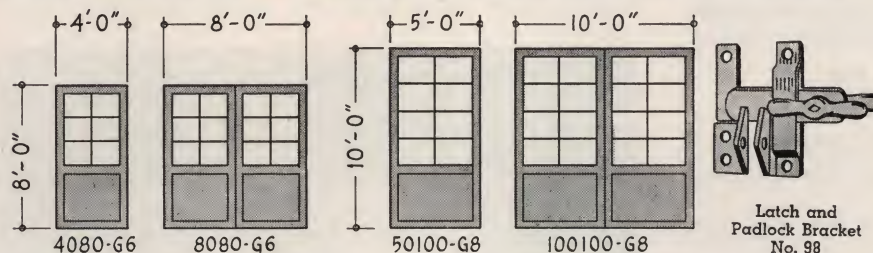
Mortise lock No. F-380 (U. S. Govt. equivalent No. 93), illustrated below, is standard for swing doors where locks are specified. Face plate and internal working parts are hard, cast bronze. Exposed bronze parts are highly polished. Round knobs, rosettes and thumb turns are malleable iron with dull black finish. Operation—Latch bolt by knob from either side. Dead bolt by key from outside and thumb turn inside.

Lock No. F-381 (U. S. Gov't equivalent No. 94) is the same as lock F-380 except that dead bolt operates by key from both sides.

Bit key locks and master keyed systems are available. Backset for all locks is 2¾".

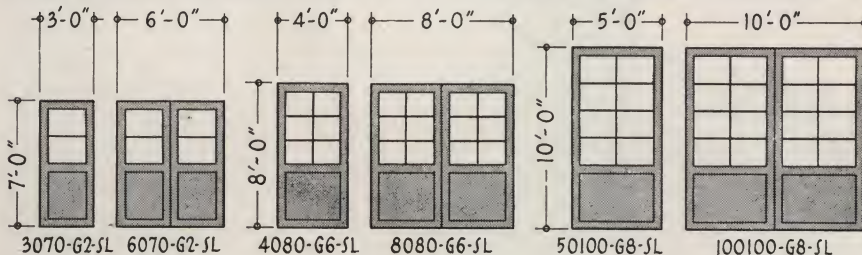


Swing Doors for Large Openings — Dimensions shown are Door Dimensions.



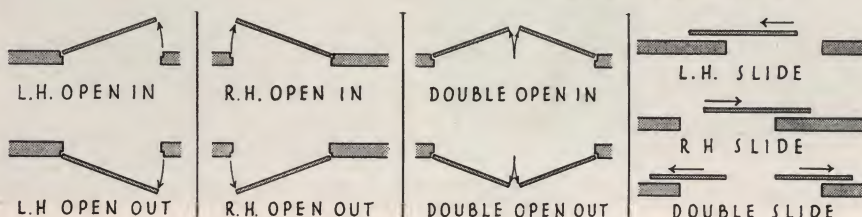
Frames are not furnished for doors 8 ft. and 10 ft. high. Hardware for these doors is listed below. The pieces of hardware required for each door must be specified. Mortise locks are not furnished. Hardware—Latch No. 98 without padlock (illustrated), half surface hinges (2 prs. per leaf), top and bottom bolts for double doors.

Slide Doors — Dimensions shown are Door Dimensions. Opening Dimensions are 4 ins. less in width and 2 ins. less in height.



Frames are not furnished for Slide Doors. Hardware—Track and brackets, trolleys and hangers, floor guides, center and end stops, door pulls (inside and outside), hasp and staple without padlock. Hasp and staple must be attached on inside.

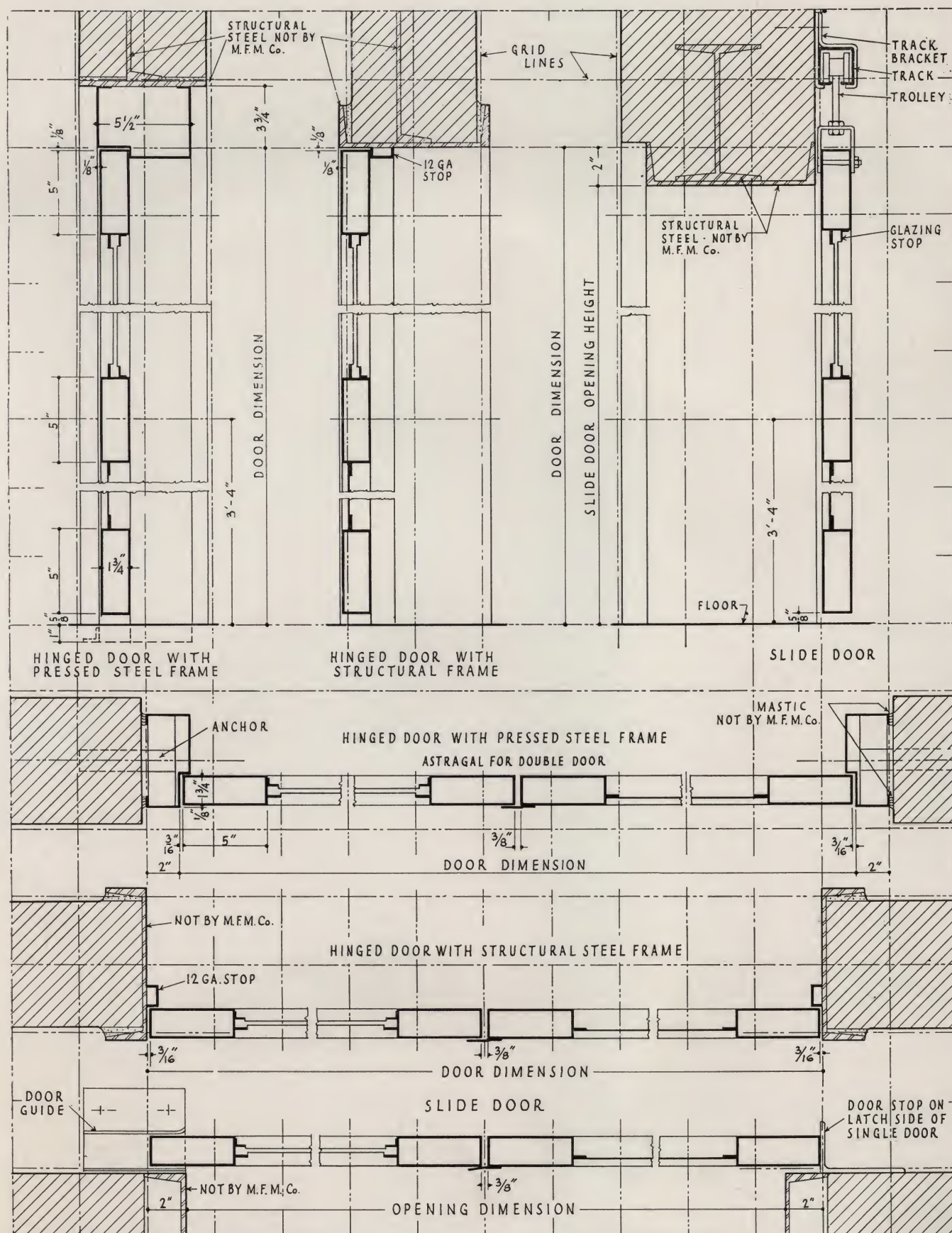
General Information



Unless otherwise specified outside is key side and, for double doors, right hand leaf (viewed from outside) is active leaf. Catalog No. indicates door size thus—3070 indicates that Door Dimensions are 3'-0" x 7'-0". M indicates solid metal panels top and bottom, G indicates glazing panel and G2, etc., indicates glazing panel divided by muntins. SL indicates a Slide Door.

MICHAEL FLYNN MANUFACTURING COMPANY — PHILADELPHIA

Lupton INDUSTRIAL DOORS—Details



Lupton STEEL TUBE DOORS

Lupton Steel Tube Doors are extra heavy doors designed for unusually large openings and to withstand extremely rough usage often encountered in industrial buildings. Rails and stiles are 14 gauge welded steel tubing. Corners are solidly welded. Steel sash inserts provide for glazing or insertion of solid steel panels.

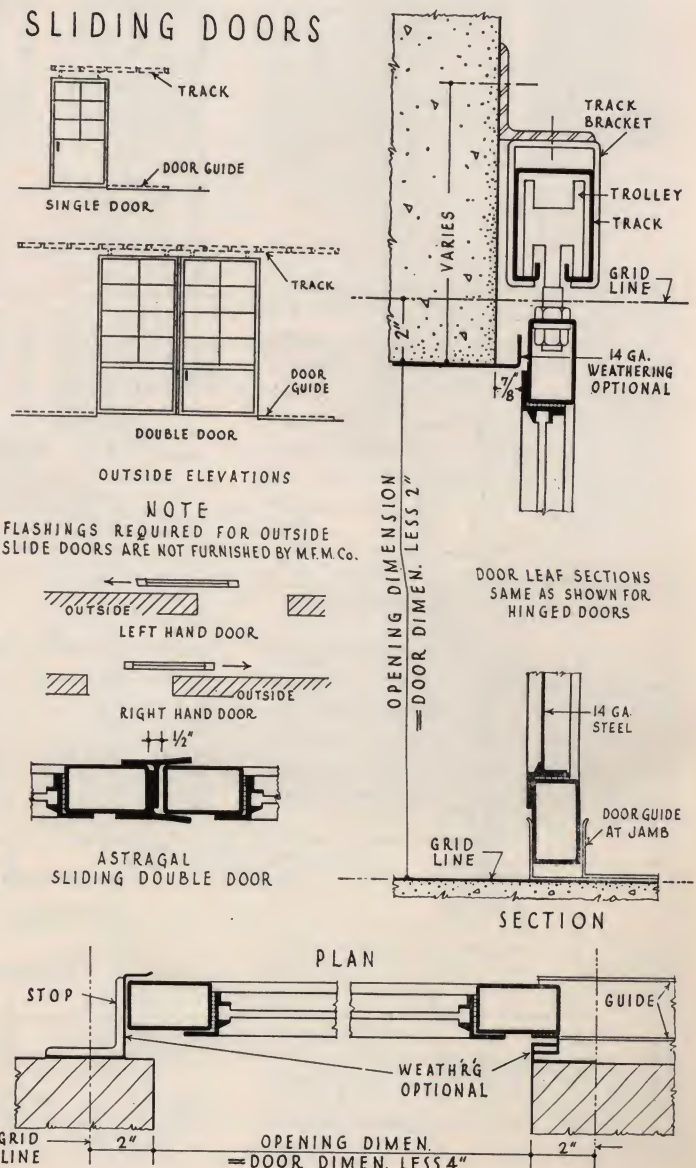
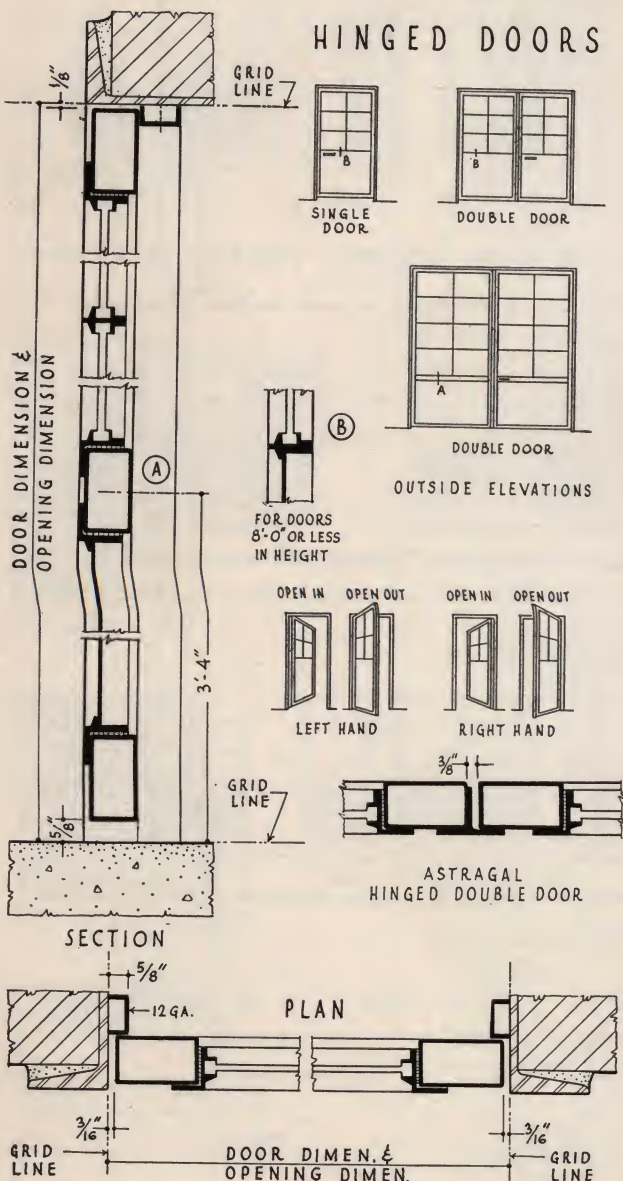
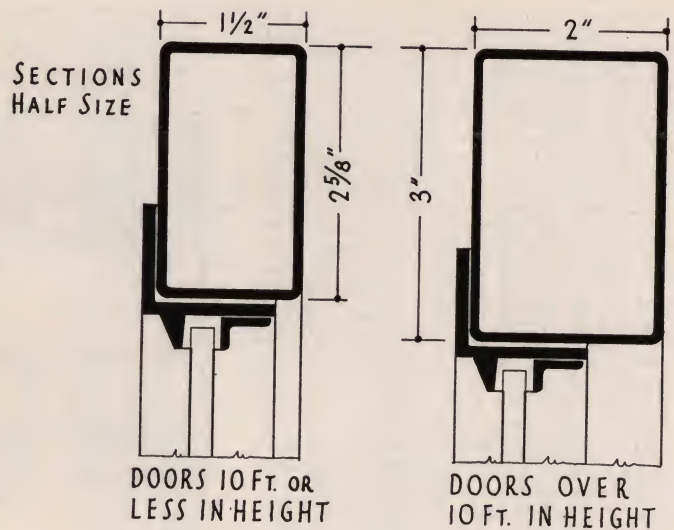
HARDWARE — For hinged doors — Ball bearing butts for doors 10 ft. or less in height, strap hinges for doors over 10 ft. high, top and bottom bolts for double doors.

For slide doors — Tracks, track brackets, roller-bearing trolleys, adjustable door guides, door stops and came bolt for dead leaf of double doors, door pulls, and hasp and staple.

For hinged or slide doors — Astragal for double doors.

At extra cost — Steel latch inside with malleable iron handle outside, mortise lock with thumb turn and cylinder, master keyed systems, bronze handles and hinges, panic hardware, door checks, 12 gauge channel stop bead for hinged doors, weathering for slide doors.

Not furnished — Structural steel frames and lintels, flashings, mastic, glass, putty and glazing.



Lupton AIRPLANE HANGAR DOORS



Lupton Hangar Doors are serving many military and naval air fields where dependable operation is of first importance.

Lupton Airplane Hangar Doors provide one of the most practical means of closing the large openings required for modern hangars. Doors have been made for openings up to 160' wide and 40' high. Larger openings are possible.

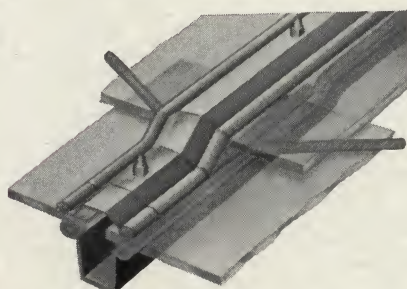
Operation is simple and sure. Maintenance and operating cost is minimized. Motor drive may be applied if desired.

Doors are carried on roller-bearing wheels that run on rails set in the floor. No unusually heavy structural supports required

overhead. Leaves are guided at the head by rollers and guide angles. When door is open leaves nest at each side of the opening in concealed pockets or on the exterior.

CONSTRUCTION—Welded structural steel frame with glazing panels in upper part, solid steel panels below. Flexible weathering between door leaves and at the floor. Pilot doors where required. Details of design conform to individual requirements.

LUPTON ROLLED STEEL, PUTTYLESS SKYLIGHT



Horizontal Joint.
Glass overlaps, and joint is sealed with saturated fibre.

LUPTON rolled steel skylight is especially adapted to conditions of unusual severity such as vibration, variation of temperature and inaccessibility for painting.

Glass is supported between flexible strands of specially treated fibre and is free to expand and contract without causing leakage.

All parts are delivered ready for assembling.

Skylight consists of rolled steel U-shaped skylight bars, 16 oz. cold rolled copper caps and curb aprons, malleable iron studs

with brass dome nuts and saturated cord. Anchors, clips, bolts, screws, etc., are furnished for glazing and anchoring.

Caps and curb aprons can also be furnished in 24-gauge galvanized iron if so specified at a corresponding price.

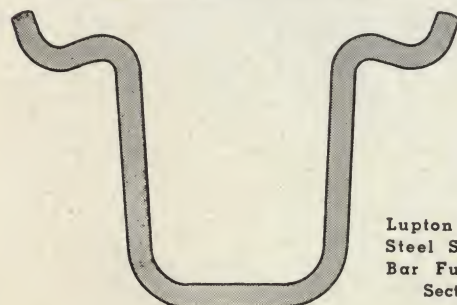
NOTE

The following items are not furnished—glass, structural steel, flashing and calking.

Punching of steel work for attachment of anchors and setting of anchors in masonry are not included in erection contract when skylight is installed by the manufacturer.

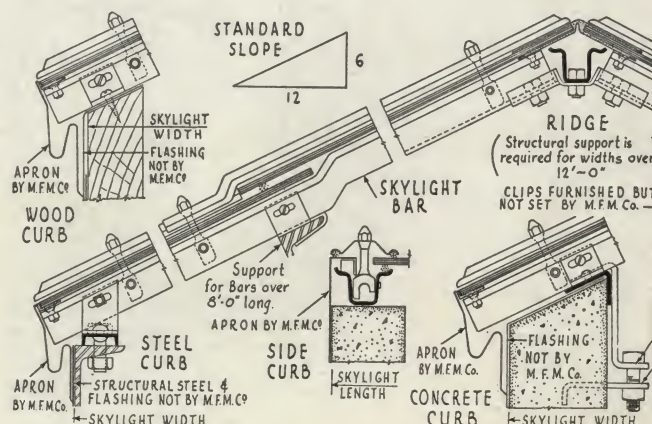
SPACING OF BARS

Width of Glass	20"	21"	22"	23"	24"
C. to C. of Bars	20 3/4"	21 3/4"	22 3/4"	23 3/4"	24 3/4"



Lupton Rolled Steel Skylight Bar Full Size Section.

Maximum unsupported length of skylight bar is 8'-0".



LUPTON

M E T A L P R O D U C T S

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SECURITY WINDOWS • PIVOTED WINDOWS • UNDERWRITERS'
WINDOWS • CONTINUOUS WINDOWS • WINDOW OPERATING
DEVICES • PUTTYLESS SKYLIGHTS • INDUSTRIAL DOORS
AIRPLANE HANGAR DOORS

MICHAEL FLYNN MANUFACTURING CO.

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51 EAST 42ND STREET, NEW YORK 17, N. Y.

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